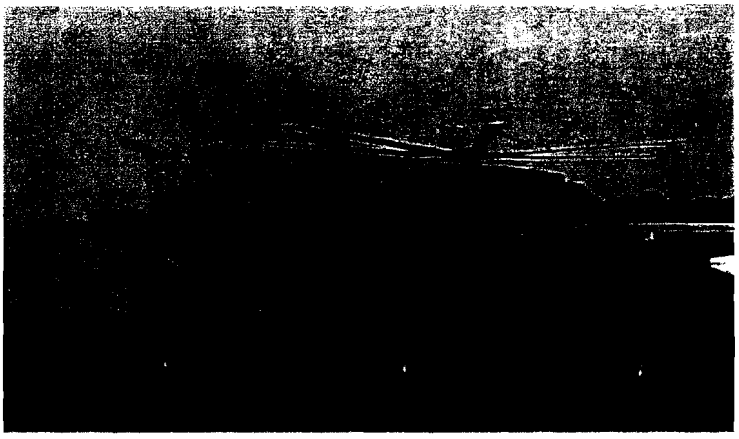
UNITED STATES AIR FORCE
AIRCRAFT ACCIDENT INVESTIGATION
BOARD REPORT

MH-53M, S/N 73-1648

16th Special Operations Wing
20th Special Operations Squadron
Hurlburt Field, Florida



LOCATION: CLASSIFIED
DATE OF ACCIDENT: 22 MAY 2003
BOARD PRESIDENT: COLONEL PAUL R. HARMON

Abbreviated Accident Investigation, conducted pursuant to Chapter 11 of Air Force Instruction 51-503

SUMMARY OF FACTS AND STATEMENT OF OPINION
MH-53M, S/N 73-1648
22 MAY 2003

TABLE OF CONTENTS

COMMONLY USED ACRONYMS AND ABBREVIATIONS

1Lt	First Lieutenant
A	Answer by Interview Witness
ACC	Assistant Crew Chief
AF	Air Force
AFB	Air Force Base
AFH	Air Force Handbook
AFI	Air Force Instruction
AFJMAN	Air Force Joint Manual
AFMAN	Air Force Manual
AFSC	Air Force Specialty Code
AFSOC	Air Force Special Operations Command
AFTO	Air Force Technical Order
AIB	Accident Investigation Board
Amn	Airman
APG	Airplane General
AR	Air Refueling
BP	Board President
BPL	Blade Pressure Light
BPO	Basic Post-Flight
CAMS	Core Automated Maintenance System
Capt	Captain
CMFD	Color Multi-Functional Display
Col	Colonel
CST	Central Standard Time
DCC	Dedicated Crew Chief
DD	Department of Defense
DoD	Department of Defense
DSN	Defense Switching Network
EMS	Equipment Maintenance Squadron
ERH	Elastomeric Rotor Head
FCF	Functional Check Flight
FL	Florida
FOD	Foreign Object Damage
FOIA	Freedom of Information Act
FTD	Field Training Detachment
GMT	Greenwich Mean Time or Zulu (Z)
HMXS	Helicopter Maintenance Squadron
IBIS	In-Flight Blade Inspection System
L	Local Time
LA	Legal Advisor
lbs	Pounds
Lt	Lieutenant

LZ	Landing Zone
MA	Mishap Aircraft
MBB	Mass Balance Bracket
MC	Mishap Co-Pilot
MFE	Mishap Flight Engineer
MIFE	Mishap Instructor Flight Engineer
MLS	Mishap Left Scanner
MOCC	Maintenance Operations Control Center
MP	Mishap Pilot
MRS	Mishap Right Scanner
MSgt	Master Sergeant
MTS	Mishap Tail Scanner
MXA	Maintenance Advisor
MXG	Maintenance Group
N/A	Not Applicable
Nav	Navigation
NCO	Non-Commissioned Officer
NDI	Non-Destructive Inspection
NOTAMs	Notices to Airmen
Ops	Operations
OTI	One Time Inspection
PHA	Preventive Health Assessment
PSI	Pounds per a Square Inch
QA	Quality Assurance
SAR	Search and Rescue
SIB	Safety Investigation Board
S/N	Serial Number
SOF	Special Operations Forces
SOS	Special Operations Squadron
SOW	Special Operations Wing
SPO	Systems Program Office
TCTO	Time Compliance Technical Order
T.O.	Technical Order
TSgt	Technical Sergeant
U.S.	United States
USAF	United States Air Force
U.S.C.	United States Code
USMC	United States Marine Corps
VFR	Visibility Flight Rules
WR-ALC	Warner Robins Air Logistics Center
Z	Zulu or Greenwich Mean Time (GMT)

The above list was compiled from the Summary of Facts, the Statement of Opinion, the Index of Tabs, and Witness Testimony (Tab V).

SUMMARY OF FACTS

1. AUTHORITY, PURPOSE, AND CIRCUMSTANCES

a. Authority

On 19 June 2003, General Paul V. Hester, Commander, Air Force Special Operations Command (AFSOC), appointed Colonel Paul R. Harmon to conduct an aircraft accident investigation of a mishap that occurred on 22 May 2003 involving an MH-53M helicopter, serial number (S/N) 73-1648, at a deployed overseas location. The investigation was conducted at Hurlburt Field, Florida, from 1 July 2003 through 18 July 2003, in accordance with Air Force Instruction (AFI) 51-503, *Aerospace Accident Investigations*, as an abbreviated accident investigation. The other members assigned to the Accident Investigation Board (AIB) were Major Thomas A. Dermody, Pilot Advisor, Captain Debra A. Luker, Legal Advisor, Captain Jennifer West, Maintenance Advisor, and Captain Timothy O. Howerton, Medical Advisor (Tabs Y-3 to Y-5, Y-7). Master Sergeant Janet L. Stafford provided administrative support.

b. Purpose

The purpose of the Board is to provide a publicly releasable report of the facts and circumstances surrounding the accident, to gather and preserve evidence for claims, litigation, disciplinary and adverse administrative actions, and for all other purposes deemed appropriate by competent authority. In addition to setting forth factual information concerning the accident, the Board President is also required to state his opinion as to the cause of the accident or the existence of factors, if any, that substantially contributed to the accident.

This investigation is separate and apart from the safety investigation, which is conducted pursuant to AFI 91-204, *Safety Investigations and Reports*, for the purpose of mishap prevention. The AIB report is available for public dissemination under the Freedom of Information Act (FOIA), title 5 of the United States Code (U.S.C.) section 552, and Department of Defense (DoD) Directive 5400.7-R/Air Force Supplement, *DoD Freedom of Information Act Program*.

c. Circumstances

The Accident Board was convened to investigate the Class A accident involving an MH-53M helicopter, S/N 73-1648, assigned to the 20th Special Operations Squadron, 16th Special Operations Wing, Air Force Special Operations Command, Hurlburt Field, Florida, which occurred during a final approach for landing to a runway at a deployed overseas location on 22 May 2003.

2. ACCIDENT SUMMARY

On 22 May 2003 the mishap aircraft, an MH-53M Pave Low helicopter, S/N 73-1648, departed a deployed location on a classified operational mission. After an uneventful mission, the mishap

aircraft (MA) returned to its initial staging base. While in a hover over the active runway, the crew heard a loud bang and felt a moderate lateral shuffle throughout the airframe. The mishap pilot (MP), Capt John M. Groves, the mishap co-pilot (MC), 1Lt Francis W. Lankist, the mishap flight engineer (MFE), TSgt Stephen G. Zeiders, the mishap instructor flight engineer (MIFE), TSgt Todd M. Buice, the mishap right scanner (MRS), TSgt John K. Tharp, the mishap left scanner (MLS), Amn Eric W. Ezell, and the mishap tail scanner (MTS), TSgt Aaron C. Bettison safely landed at the deployed airfield, taxied to parking and shutdown the MA. Post-flight inspection of the aircraft revealed a main rotor blade mass balance bracket and its associated hardware and weights were missing from one main rotor blade. This assembly apparently struck and damaged two other rotor blades and may have caused damage to other dynamic main rotor system components. There were no fatalities or injuries to any personnel related to this mishap.

3. BACKGROUND

a. Mishap Unit and Mission

The 20th Special Operations Squadron (SOS) is a component of the 16th Special Operations Wing (SOW). The wing and its subordinate units are all components of Air Force Special Operations Command (AFSOC). The mishap aircraft was returning from a combat mission when the mishap occurred.

b. MH-53M Pave Low

The MH-53M Pave Low helicopter is a modified version of the basic HH-53B/C/H/J helicopter manufactured by Sikorsky Aircraft, Division of United Technologies, Stratford, Connecticut. The helicopter is powered by two General Electric T64-GE-100 engines.

MH-53M Pave Low Helicopter

The Pave Low helicopter is the largest, most powerful and technologically advanced helicopter in the Air Force inventory.

c. MH-53M Pave Low Operations

The helicopter's primary mission is to infiltrate and exfiltrate Special Operations Forces (SOF). The helicopter is equipped with terrain-following radar and an enhanced navigation system to provide safe and effective night and adverse weather flight capability. Mission requirements can be accomplished at low altitudes, during total darkness and adverse weather over all types of topography.

Infiltration of Personnel from an MH-53 Helicopter

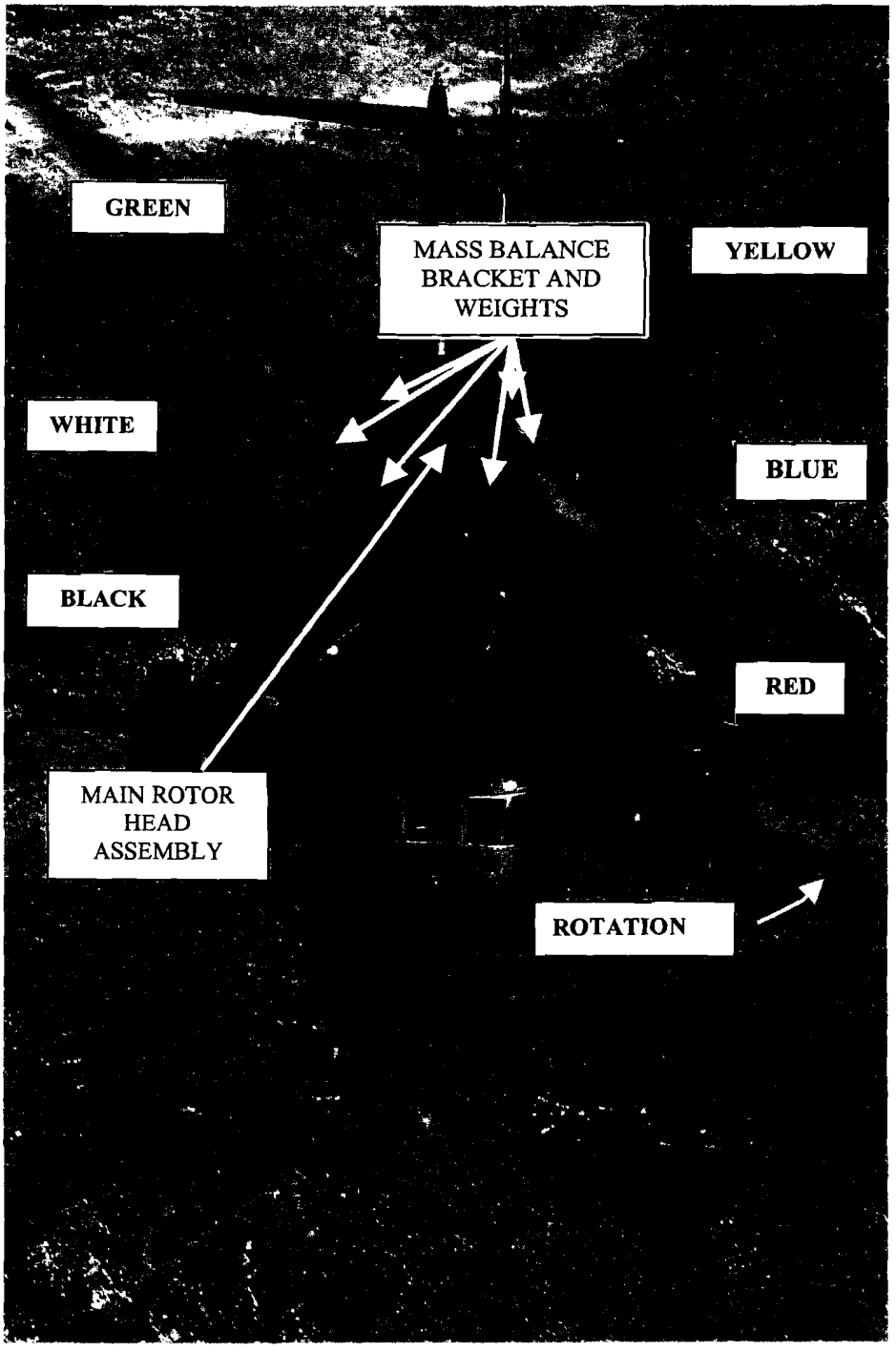
d. MH-53M Pave Low Aircrew

A normal tactical crew on the MH-53M Pave Low consists of six aircrew members. Typically, there is a designated pilot (or Aircraft Commander), co-pilot, two flight engineers and two aerial gunners; these descriptions are Air Force Specialty Code (AFSC) titles. The crew concept employed on the Pave Low has these aircrew members assigned to various stations and dictates that they are referred to by their specific crew positions during operation. These *crew* positions are distinct from their *AFSC* titles. The crew positions are: the "pilot" sits in the right-hand pilot seat in the cockpit; the "co-pilot" sits in the left-hand pilot seat; the "flight engineer" sits in a center jump seat between pilot and co-pilot; the "right scanner" (a flight engineer) occupies the right door position; the "left scanner" (an aerial gunner) occupies the left window position; the "tail scanner" (an aerial gunner) is positioned on the ramp, located at the tail of the aircraft.

For intercommunications system purposes, the pilots and crewmembers are identified by which seat or position they occupy in the aircraft. The pilot and co-pilot are responsible for flying the aircraft, navigation and communications. Flight engineers are qualified to occupy both the jump seat and right door positions. They are responsible for aircraft preflight and a myriad of systems operations. When occupying the right scanner position, the flight engineers are responsible for hoist and alternate insertion/extraction equipment operation, weapons employment and scanning duties. Aerial gunners are qualified to occupy the left window and ramp positions, and they are responsible for alternate insertion/extraction operation, weapons employment and scanning duties.

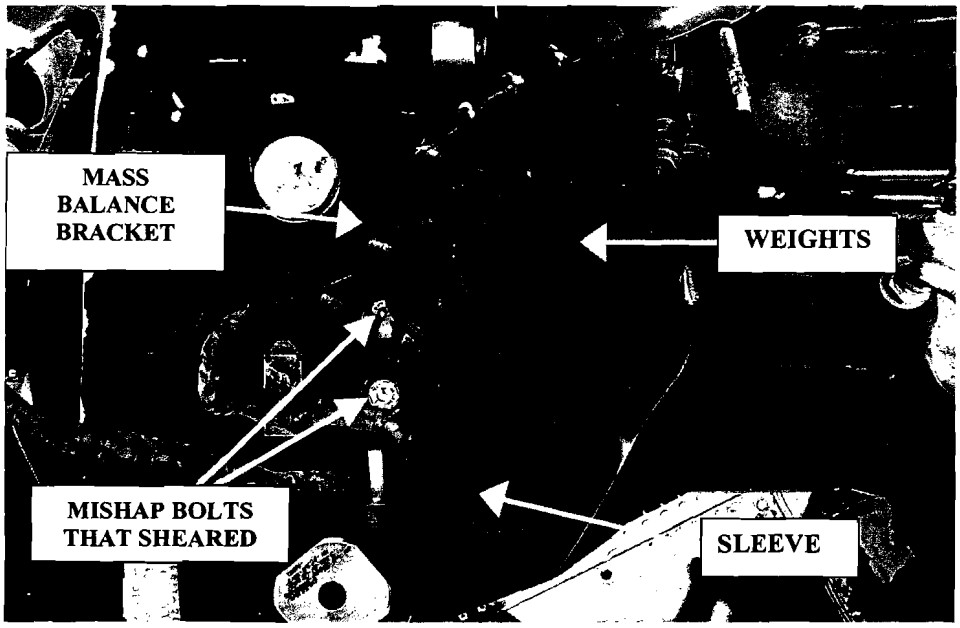
e. Main Rotor Assembly

The main rotor head assembly on an MH-53M provides the means of transmitting flight control movements to the six main rotor blades. The six main rotor blades are designated and referenced by the colors shown in the picture below.



MH-53M Main Rotor Head

The main rotor head has elastomeric bearings which allow the blades to lead and lag. The yolk and sleeve assemblies allow each blade to rotate and change blade pitch. The swashplate and pitch control rods transmit flight control inputs to the main rotor blades through the yoke and sleeve assemblies. The mass mounting brackets and weights are mounted on the yolk and sleeve assemblies as shown in the picture below and are used to balance the main rotor head.



Mass Balance Bracket and Weights

4. SEQUENCE OF EVENTS

a. Mission

The 20 SOS was conducting an operational, day tactical mission at a deployed location at the time of the mishap. The mishap aircraft was the second aircraft in a formation of four helicopters, consisting of two United States Air Force (USAF) MH-53 and two United States Marine Corps (USMC) CH-53 helicopters, and was to provide on-call ordinance delivery, exfiltrate a SOF team and return to base (Tabs V-10, V-27). The mission was conducted under the auspices and authorization of the chain of command (Tab K-3).

b. Planning

Mission planning was conducted the day prior to the mishap (Tabs V-9, V-23, V-27). This procedure allowed adequate time for proper mission planning and no last-minute changes were made to the assigned aircrew, aircraft or mission (Tabs V-9, V-28).

c. Preflight

A complete tactical mission brief was performed on the night prior to the mishap due to the early takeoff time (Tab V-23). On the day of the mishap, the MP and MC got an updated briefing on weather and met the remainder of the crew next to the MA to finalize preflight preparations (Tab V-9). The flight engineers conducted the preflight and engine start checks went as planned. The MA was prepared for takeoff ahead of schedule. (Tab V-23)

d. Summary of Accident

The MA departed the airfield as planned at 0955 local time (0655 GMT) on 22 May 2003, flying as the second helicopter in a formation (Tabs K-5, V-10, V-11, V-28). The en route portions of the flight were uneventful, with an aerial refueling on both the inbound and outbound legs of the mission to and from the objective area (Tabs V-10, V-23, V-28).

MH-53 Air Refueling Operation

Actions at the objective mission landing zone were uneventful, with the MA picking up its pre-briefed cargo and personnel (Tabs V-10, V-28). Approximately 6.7 hours after takeoff, the flight of four helicopters returned to their home operating base. On final approach to landing, at approximately 20 to 30 feet above ground level, the crew heard a loud bang and experienced a moderate but controllable lateral shuffle throughout the airframe (Tabs V-11, V-24, V-28). This lateral shuffle of the MA was similar to the motion of an unbalanced washing machine (Tabs V-19, V-28). The MTS queried the rest of the crew as to whether they had heard the noise (Tabs V-11, V-28). Near simultaneously, the MC noticed a Master Caution light illuminate and an associated Blade Pressure caution light illuminate on the caution and advisory panel (Tabs V-11, V-24, V-28). Due to their proximity to the ground and the effective controllability of the aircraft, the MP elected to continue the approach to the ground in lieu of the planned slow hover forward over the ground toward the appropriate runway exit before landing the helicopter. After landing and a subsequent reduction in power, the prominent lateral vibration subsided and was barely noticeable during taxi. The mishap aircrew did not detect any damage at this time. (Tabs V-12, V-24, V-28) The MP elected to continue ground taxiing to parking so as not to block the

active runway or taxiway (Tabs V-13, V-28). Once in parking, the aircrew elected to do a normal rotor brake shutdown as per the flight manual, because they did not believe there was any significant damage to the aircraft (Tabs V-13 to V-14, V-24, V-28). After shutdown, it was discovered that two rotor blades had sustained significant damage (Tabs S-11 to S-21, V-14 to V-15, V-24).

e. Impact

Immediately after shutdown and discovery of the damaged rotor blades, maintenance personnel determined that a main rotor blade mass balance bracket and its associated hardware and weights departed from the aircraft. They discovered the two bolts (as depicted in the picture on page 5) that mount the bracket to the sleeve of the rotor head sheared, allowing the bracket and weight assembly as a whole to depart the aircraft, impact two main rotor blades and possibly damage the associated rotor system components. (Tabs A-3, B-3, V-16 to V-17, V-25, V-29) This determination occurred at approximately 1635 local time (1335 GMT) on 22 May 2003 (Tab K-5).

The main rotor blade mass balance bracket is mounted at the hub of the rotor head on top of the blade sleeve (Tab Z-3). Each of the six blades on an MH-53M helicopter has the weight bracket attached, but weights are only attached to the bracket if necessary to balance the rotor head (Tab V-31). The mass balance bracket, bolts and weights were recovered after maintenance personnel conducted a foreign object damage (FOD) walk along the runway (Tabs V-16, V-49 to V-50).

f. Life Support Equipment, Egress, Survival

Not applicable.

g. Search and Rescue (SAR)

Not applicable.

h. Recovery of Remains

Not applicable.

5. MAINTENANCE

a. Forms Documentation

A detailed set of maintenance documents is kept on every Air Force aircraft; these documents record the entire maintenance history of that aircraft. The current and recent history records are kept in hard copy on Air Force Technical Order (AFTO) 781 series forms. In addition, electronic records are kept on each aircraft via the Core Automated Maintenance System (CAMS). All existing 781 forms were reviewed for accuracy and completeness. These forms, in conjunction with data obtained from CAMS, was used to determine the condition of the MA, MH-53M, S/N 73-1648, during the 90 days prior to the mishap.

The MA had flown 42 sorties for 121.5 hours from 21 February 2003 to 22 May 2003. Of these sorties, eight were Code 1 (no significant maintenance problems noted), 28 were Code 2 (aircraft has some degraded system performance, but is still flyable) and five were Code 3 (significant problems that require repair before the aircraft can fly again). At the time of the mishap, the total aircraft time was 8,320.9 hours, the main rotor head time was 1,189.6 hours, the #1 engine time was 96.5 hours and the #2 engine time was 1,248.7 hours (Tab H-3). There were no major maintenance discrepancies that would have prevented aircraft 73-1648 from accomplishing its tasked mission.

b. Inspections

Technical Orders (T.O.s) are a set of step-by-step instructions on how to perform a task, including operational checks and corrosion control. There are T.O.s for all maintenance tasks and inspections. All routine inspections on the mishap aircraft were completed satisfactorily. The last minor scheduled inspection was a basic post-flight/preflight inspection completed at 1700 local time (1400 GMT) on 20 May 2003, 40 hours before the mishap sortie. The inspection is valid for 72 hours and was still valid for the mishap sortie. Inspection of the "main rotor balance weights and brackets for security" is a required item on this inspection and no discrepancies were noted (Tab BB-3). No other scheduled inspections specifically mention the main rotor balance weights and brackets.

The major scheduled inspection cycle for the MH-53M is the 300-hour phase inspection program. The most recent major inspection was a combat phase inspection completed at the deployed location on 6 March 2003 at 8,225.9 flying hours (Tab H-4). A normal phase inspection and combat phase inspection differ only in that a combat phase inspection allows certain pre-approved tasks to be deferred to a more convenient time period (usually before the next major inspection) to facilitate greater flexibility and utilization of an aerospace asset in a combat environment. All routine and phase inspections, including the deferred inspections, were completed prior to the mishap and were not a factor in this accident.

c. Maintenance Procedures

The main rotor head is a Sikorsky product; however, the mass balance brackets and weights were not a part of the original Sikorsky design. This balancing system was designed by Warner Robins Air Logistics Center (WR-ALC) and was neither accepted nor recognized by Sikorsky until recently. When a rotor head went through Sikorsky for overhaul (scheduled every 2,500 flying hours), Sikorsky removed and disposed of the brackets and weights. The standard maintenance procedure in the field was to remove the brackets and weights before sending the rotor head to Sikorsky. The brackets were then attached when the rotor head was returned to the field and installed on an aircraft. (Tab V-31)

The rotor head in question was overhauled at Sikorsky in June 1999 and installed on aircraft 69-5794 on 13 June 2000 at Hurlburt Field, Florida. It was subsequently removed and reinstalled on aircraft 73-1648 on 3 January 2001. (Tab U-5) It is standard maintenance practice not to remove the mass balance brackets from the blade sleeve when the rotor head is moved from

aircraft to aircraft. The brackets are considered part of the rotor head. (Tabs V-31, V-35) The weights, however, are adjusted as necessary to balance the rotor head on the new aircraft. Therefore, it can be concluded the bracket and hardware on the subject rotor head were last installed on or about 13 June 2000.

Upon inspection of the mishap bracket, it was evident no sealant was used and the bolts and nuts used were not the hardware specified by T.O. 1H-53(M)J-2-4, the T.O. governing "Installation of Balance Weight Bracket and Weights on the Main Rotor Assembly." (Tab BB-9) There are no approved suitable substitutions for these bolts and nuts. The only time the weights mounted to these brackets are changed is when the rotor head is removed or during a rotor head track and balance (Tab V-35).

Track and balance data was also investigated to try to determine the most recent time the weights mounted to this bracket were adjusted, and thus showing the most recent time maintenance was performed in the immediate area of the failed hardware. To clarify, the bolts that failed on aircraft 73-1648 would not be affected by a track and balance procedure; only the amount of weight attached to a bracket is changed. The track and balance data for this aircraft for the year 2002 was unavailable due to a hardware malfunction (Tab V-48). Track and balance data from January 2003 indicated this blade had nine pounds (lbs) installed on it, the maximum amount permitted by the T.O. It is impossible to determine when the weights were last adjusted due to the lack of data prior to January 2003. The most recent track and balance on this rotor head was completed on 15 April 2003, and indicated this blade still had nine lbs installed, and therefore, as best can be determined there was nine lbs installed on the blue blade balance weight bracket at the time of the mishap. (Tab U-3)

Time Compliance Technical Order (TCTO) 1H-53(M)J-587 was issued by WR-ALC on 5 March 1998 and is applicable to all USAF MH-53J helicopters. This TCTO dictated that the depleted uranium blade weights be replaced with steel ones and new brackets be installed to accommodate them. (Tab O-35) Since the steel weights were less dense than the depleted uranium, the brackets were redesigned to hold two layers of rectangular weights where the previous design only required one layer of weights (Tab V-31). This TCTO was completed on all USAF MH-53 helicopters by March 1999. This entire TCTO can be found starting at Tab O-35.

All other standard maintenance procedures were followed leading up the mishap sortie and had no bearing on the mishap sequence of events. There were two discrepancies for vibrations approximately one month prior to the mishap, but the corrective actions for both would not have affected the mass mounting bracket. An overview of the last 90 days of pilot-reported discrepancies is included in Tabs H-3 to H-4.

d. Maintenance Personnel and Supervision

Interviews conducted with maintenance personnel indicated all preflight activities were normal and all personnel involved in the preflight and launch of the MA were experienced and qualified. There was no evidence indicating a lack of supervision before or during the MA's launch. (Tabs V-39 to V-40)

e. Fuel, Hydraulic and Oil Inspection Analysis

Fuel, hydraulic and oil were not factors in this mishap.

f. Unscheduled Maintenance

No unscheduled maintenance was performed on the aircraft since the last scheduled preflight inspection.

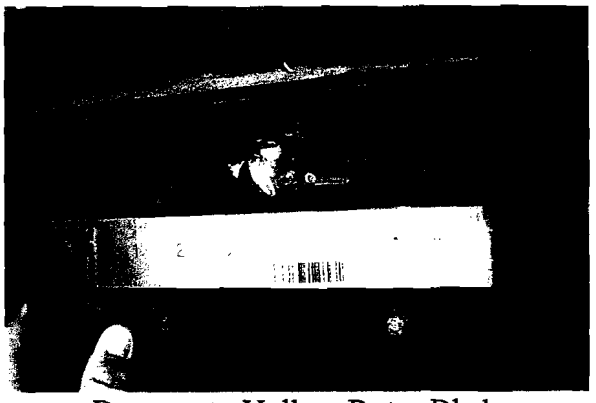
6. AIRCRAFT AND AIRFRAME, MISSILE, OR SPACE VEHICLE SYSTEMS

a. Condition of Systems

The MA was on final approach approximately 20 to 30 feet above ground level when the mishap aircrew heard a bang, felt a vibration and noticed a Blade Pressure caution light illuminated on the caution panel (Tabs V-11, V-24, V-28). This Blade Pressure light indicated a possible loss of pressure in one or more main rotor blade spars with a corresponding potential for impending spar and rotor blade failure. The main rotor blades on the MH-53M are constructed with a fiberglass and resin airfoil around a tubular titanium spar. Each blade spar is pressurized and incorporates a spar pressure indicating system for spar crack detection. The In-Flight Blade Inspection System (IBIS) consists of each rotor blade spar, a pressure indicator (with a radioactive source), a radiation detector, a signal processor with a test panel in the cabin and the Blade Pressure caution light. When spar pressure is lost, the pressure indicator moves to the unshielded position, exposing the radioactive source. The radiation detector, mounted aft of the main gear box, illuminates the Blade Pressure caution light in the cockpit via the signal processor. The vibration felt by the mishap aircrew decreased upon landing, and the Blade Pressure caution light remained illuminated. All other aircraft systems were functioning normally.

After landing, inspection revealed damage to the green and yellow main rotor blades and the mass balance bracket and weights were missing from the blue main rotor blade (Tab H-7). The green and yellow rotor blades had damage as indicated below:

Damage to Green Rotor Blade
(Tab S-13)



Damage to Yellow Rotor Blade
(Tab S-19)

No other damage was visible; however, T.O. 1H-53(M)J-2-4, paragraph 5-5.1.2 states, "Any time an installed main rotor blade or tail rotor blade is damaged by striking an object...the dynamic components of the helicopter qualify for a Sudden Stoppage Inspection." This inspection directs the rotor blade, main rotor head assembly, swashplate assembly and main gear box must be removed and returned to the correct repair facility for complete overhaul and detailed inspection. (Tabs BB-11 to BB-12) All of these items were removed and replaced at the mishap location (Tabs V-17 to V-18, V-43).

A search for the missing mass balance bracket and weights was conducted, and the assembly was found near the mishap runway. Further inspection discovered the mass balance bracket mounting bolts had sheared just above the nut, as shown in Tabs S-5 and S-9, allowing the bracket and weights to break away from the aircraft and strike the green and yellow main rotor blades as depicted on the diagram in Tab R-3. The bracket, bolts, nuts and part of the weights that were recovered from a field off the landing pad were sent to Warner Robins Air Logistics Center for testing.

All of the brackets, hardware and weights were removed from the mishap main rotor head and either disposed of or used on other aircraft at the deployed location to comply with TCTO 1H-53-950, an Immediate Action TCTO directing replacement of all mass balance bracket hardware. (Tabs V-32, V-43) Therefore, the Board was unable to verify the torque value of the remaining bolts, to verify if the correct hardware was installed on the rest of the MA's main rotor head or to inspect visually the remaining brackets and bolts for corrosion and the presence of sealant on the mating side of the brackets. No evidence of sealant or corrosion was found on the sleeve side of the bracket mounting locations.

b. Testing

The weight bracket, bolts and nuts were sent to the Materials Analysis Branch at Warner Robins Air Logistics Center for a failure analysis report. A metallurgist tested the items for fatigue, corrosion and material composition. (Tabs J-3 to J-9)

The bracket exhibited hidden crevice corrosion on the lower surface, resulting in pillowing (a bubbling deformity under the surface) in the joint, which would be expected to upset the fastener pre-load and clamping forces, allowing a slight vibration. Furthermore, the bracket was installed without any sealant as specified in the T.O., which would allow corrosive elements to intrude. (Tab J-8)

Laboratory analysis revealed both mounting bracket bolts failed by fatigue and had significant fatigue cracks across their diameters. The bolts used were not the bolts specified by T.O. 1H-53(M)J-2-4, and when compared to the correct bolts, the grip length and overall length of the fractured bolts was substantially shorter. When tested for hardness, the fractured bolts were found to have a slightly lower tensile strength than the specifications. The actual variation, however, is so slight as to be considered inconsequential. Additionally, the bolts displayed partial surface decarburization (a breakdown in the heat treating process used to harden steel during manufacturing), which is acknowledged to be a contributing factor to the initiation of the

fatigue cracks. The characteristics of the fatigue cracks found on the fracture surfaces of the two bolts indicate the outer bolt failed first, resulting in the overload and subsequent failure of the inner bolt. (Tabs J-8 and J-9)

The nuts also did not comply with the T.O. specifications; the nuts used were cadmium plated and the T.O. calls for silver plated. However, this plating did not contribute to the failure; in fact, some engineers would prefer its material and plating system over the cited specification. (Tab J-9)

The torque value of the bolts was undeterminable.

Slight thread pitch mismatch was found between the internal threads of the nut and the external threads of the bolt. This mismatch could account for inadequate fastener pre-load and clamping forces. (Tab J-9)

The overall conclusion of the failure analysis was the weight bracket failed in flight due to fatigue fractures of both fasteners with the main contributing factors being:

1) The hidden crevice corrosion and pillowing on the bracket,
2) The decarburization and overall integrity of the bolts and nuts since they were not the hardware specified by the T.O., and
3) The thread pitch mismatch between the bolts and nuts.

(Tabs J-8 to J-9)

7. WEATHER

a. Observed Weather

The deployed location weather for 22 May 2003 was categorized within Visibility Flight Rules (VFR). This means the cloud ceiling was greater than a 1,000 feet and the visibility was greater than three miles. (Tab C-3) Observations by the mishap crew also state weather conditions were favorable, characterized as clear skies with visibility greater than seven miles (Tabs K-7, V-10).

b. Conclusion

Operations were being conducted within prescribed operational weather limitations. The weather at the time of the mishap was not a factor in this accident.

8. CREW QUALIFICATIONS

a. Training

All of the mishap aircrew had the requisite training to conduct the mission. (Tabs G-3 to G-51) An additional flight engineer who was undergoing requalification training was on board at the time of the mishap and was under the supervision of an experienced instructor flight engineer

during the sortie (Tabs V-8, V-23, V-27). Crew qualifications had no bearing on the events that led to the mishap.

b. Experience

The mishap aircrew contained a variety of experience levels, all of which had recent flying experience as indicated by their 30/60/90 day reports. The crew was current and qualified to conduct the mission being executed at the time of the mishap. (Tabs V-7, V-11, V-15, V-19, V-23, V-27, V-31, V-37, V-43 and V-49) The mishap aircrew's flight time during the 90 days before the mishap is as follows:

Mishap Crew Members	Last 30 days Hours	Last 60 days Hours	Last 90 days Hours	Sorties
Mishap Pilot	25.1	52.6	79.8	29
Mishap Co-Pilot	42.1	69.6	94.0	37
Mishap Instructor Flight Engineer	33.2	64.2	108.5	40
Mishap Flight Engineer	29.1	34.5	34.5	16
Mishap Right Scanner	33.5	64.5	107.4	39
Mishap Left Scanner	12.5	33.4	78.3	28
Mishap Tail Scanner	37.0	58.4	94.6	31

(Tabs V-7, V-15, V-23, V-31, V-37, V-43 and V-49)

9. MEDICAL

a. Qualifications

An initial medical records review indicated all crewmembers were medically qualified for flight duty at the time of the mishap. Review of the Preventative Health Assessment (PHA), Individual Medical Readiness, Composite Healthcare System and Automated Information Management Tracking System databases revealed the entire mishap crew had current PHA physicals and medical qualifications were not a factor in the incident.

b. Health

A review of the crewmembers records revealed no injuries or medical complaints related to this mishap. Psychological assessments were not recorded. There were no indications of the presence of injuries or medical conditions prior to the mishap. The deployed SOF Medical Element and senior USAF flight surgeon revealed that no post-accident physicals or 14-day histories were gathered because the incident was originally not thought to be one requiring comprehensive medical investigation (Tab G-3). The medical team also stated that none of the individuals from the aircrew came to the deployed clinic requesting medical support.

c. Toxicology

There were no blood or urine samples from the aircrew to review. Routine post-deployment blood samples were within normal limits for all crewmembers.

d. Lifestyle

There is no evidence unusual habits, behaviors or stress on the part of the aircrew contributed to the accident. (Tab V-6)

e. Crew Rest and Crew Duty Time

A review of the duty cycles leading up to the mishap indicated adequate crew rest. The mishap crew stated they were well rested and had no complaints or illnesses. Fatigue was not reported by the crew and is not a factor in this mishap. The mishap crew did not suffer from stress, pressure, fatigue or lack of resources prior to or during the mishap event. (Tab V-6)

10. OPERATIONS AND SUPERVISION

a. Operations

According to interviews of the mishap aircrew and maintenance members, the operations tempo, crew rest and morale were not factors in the mishap. Confidence was high the mission could be accomplished successfully and that it posed no unusual risks. All crewmembers felt prepared with sufficient preflight preparation (Tabs V-6 to V-8, V-27).

b. Supervision

The deployed mission commander was involved in the preparation and approval of this mission. Supervision was not a contributing factor in this mishap.

11. HUMAN FACTORS

There was no evidence that complacency, overconfidence, distraction, pressure, channelized attention or uncharacteristic mistakes on the part of the aircrew, air traffic control, maintenance or fire department personnel contributed to this accident. All personnel involved have a significant level of experience and exhibit a thoroughly professional attitude and approach to all aircraft operations. There is no evidence that human factors contributed to this mishap.

12. GOVERNING DIRECTIVES AND PUBLICATIONS

a. Primary Operations Directives and Publications

1. Air Force Instruction (AFI) 1-2MH-53, Volume 1, *MH-53 Aircrew Training*, 11 July 2001

2. AFI 1-2MH-53, Volume 2, *Aircrew Evaluation Criteria*, 1 March 1999
3. AFI 1-2MH-53, Volume 3, *Operation Procedures*, 3 May 2001
4. AFI 11-201, *Flight Information Publications*, 1 September 1997
5. AFI 11-202, Volume 1, *Aircrew Training*, 21 June 2002
6. AFI 11-202, Volume 2, *Aircrew Standardization/Evaluation Program*, 17 June 2002
7. AFI 11-202, Volume 3, *General Flight Rules*, 6 June 2003
8. Air Force Handbook (AFH) 11-203, Volume 1, *Weather for Aircrews*, 1 March 1997
9. AFH 11-203, Volume 2, *Weather for Aircrews*, 16 May 2002
10. Air Force Joint Manual (AFJMAN) 11-208, *Department of Defense Notice to Airmen (NOTAM) System*, 1 January 1997
11. Air Force Manual (AFMAN) 11-217, Volume 1, *Instrument Flight Procedures*, 29 December 2000
12. AFI 21-101, *Aerospace Equipment Maintenance Management*, 1 Oct 2002
13. Technical Order (T.O.) 1H-53(M)J-2-4, 27 May 1994
14. T.O. 1H-53(M)J-4TP-28
15. T.O. 1H-53(M)J-6WC-1, *A Phase Inspection*
16. T.O. 1H-53(M)J-6WC-3, *Combat Phase Inspection*
17. T.O. 1H-53(M)M-1, *USAF Series MH-53M Helicopter Flight Manual*, 31 January 2001
18. T.O. 1H-53(M)M-1S-1, *Operational Supplement to USAF Series MH-53M Helicopter Flight Manual*, 31 August 2001
19. T.O. 1H-53(M)M-1S-2, *Operational Supplement to USAF Series MH-53M Helicopter Flight Manual*, 28 September 2001
20. T.O. 1H-53(M)M-1S-3, *Operational Supplement to USAF Series MH-53M Helicopter Flight Manual*, 28 December 2001
21. T.O. 1H-53(M)M-1SS-6, *Safety Supplement to USAF Series MH-53M Helicopter Flight Manual*, 24 May 2002
22. T.O. 1H-53(M)M-1S-8, *Operational Supplement to USAF Series MH-53M Helicopter Flight Manual*, 24 January 2003
23. T.O. 1H-53(M)M-1S-9, *Operational Supplement to USAF Series MH-53M Helicopter Flight Manual*, 21 February 2003
24. Time Compliance Technical Order (TCTO) 1H53(M)J-587, *Inspection of Balance Weight to the Main Rotor System, P/N 65103-11500-047 MRH, on MH-53J Helicopters*, 5 March 1998

NOTICE: Most of the Air Force publications listed above are available digitally on the Air Force Departmental Publishing Office internet site at: **http://www.e-publishing.af.mil.**

b. Known or Suspected Deviations from Directives or Publications

In this mishap, there are known deviations from the applicable directives. According to T.O. 1H-53(M)J-2-4, Table 5-5, page 5-45, the correct bolt to use to attach the mass balance bracket to the rotor blade sleeve is NAS6604-15 (Tab BB-10). The bolts used were marked with the designation "X" "01D0." (Tab J-5) Also in paragraph 5.4.4.2.f, page 5-42, the T.O. specifies, "Apply a thin coating of sealing compound (C-73) to the mating surface of the ERH sleeve (21) and weight bracket (2)" (Tab BB-9). Sealant was not placed between the failed mounting

bracket and rotor blade sleeve, based on inspection of the bracket and mounting location on the rotor head.

13. NEWS MEDIA INVOLVEMENT

This event received no media attention. According to Capt Thomas Knowles from Hurlburt Field's 16th SOW Public Affairs Office and TSgt Virginia Schreitmueller from the Headquarters AFSOC Public Affairs Office, there were no press releases issued and no interest in this mishap from any media outlet.

18 July 2003

PAUL R. HARMON, Colonel, USAF
President, Accident Investigation Board

STATEMENT OF OPINION

MH-53M, S/N 73-1648 ACCIDENT
22 May 2003

Under 10 U.S.C. 2254(d), any opinion of the accident investigators as to the cause of, or the factors contributing to, the accident set forth in the accident investigation report may not be considered as evidence in any civil or criminal proceeding arising from an aircraft accident, nor may such information be considered an admission of liability by the United States or by any person referred to in those conclusions or statements.

1. OPINION SUMMARY

The investigation showed by clear and convincing evidence the mishap involving the MH-53M helicopter, S/N 73-1648, on 22 May 2003 was caused by the material failure of two bolts that secured the mass mounting bracket and main rotor head balance weights to the main rotor head. When these bolts broke, the mass mounting bracket and weights (approximately nine pounds) departed the aircraft, striking two of the six main rotor blades on the helicopter. One rotor blade was struck on the leading edge, causing major damage. The second blade incurred minor damage. Because of the major damage to the first rotor blade, maintenance directives (T.O. 1H-53(M)J-2-4) indicate there could be damage to the rotor head, main transmission and rotating swashplate due to momentary sudden stoppage and require that these components be removed from the aircraft.

2. BACKGROUND

The incident took place at approximately 1635 local time (1335 GMT) while the aircraft was on its final approach and landing after a 6.7-hour mission at a deployed, overseas location. At approximately 20 to 30 feet above the ground, the flight crew heard and felt a loud bang. The crew immediately felt a lateral vibration and noticed the Blade Pressure caution light had illuminated. This caution light indicates a possible impending failure of a main rotor blade spar that may affect safety of flight. The flight crew continued the approach to a landing. Once on the ground and with a subsequent reduction in power, the lateral vibration subsided. The crew taxied the aircraft to parking and shutdown the aircraft. After the rotor blades stopped turning, aircrew and maintenance personnel inspected the helicopter and found damage to two main rotor blades and discovered one set of main rotor blade balance weights missing. Maintenance personnel searched the vicinity of the landing area and found several of the missing weights, the mounting bracket and the mounting bolts and nuts.

The mounting brackets and weights were first installed on the MH-53 fleet when the folding elastomeric rotor head replaced the old non-folding head, thus allowing the MH-53 to be operated on ships. The brackets and associated weights balance the rotor system for smooth flight, not unlike balancing automobile tires by adding weights to compensate for minor

variations in tire manufacturing. As best can be determined, the brackets were mounted to the rotor head on 13 June 2000, at Hurlburt Field, Florida, accumulating approximately 1,190 flight hours prior to the mishap. After each flight, maintenance crews inspect the main rotor balance weights and brackets for security. Criteria for inspection tell the maintenance personnel to check for general security and corrosion. This means a maintenance technician will visually inspect the bracket for corrosion and touch the weight and bracket unit to see if it is loose. Removal is not required. Testimony revealed the mounting bracket is not removed or re-tightened unless the bracket is taken off and put on another aircraft.

3. DISCUSSION OF OPINION

The Accident Board reviewed the qualifications of the mishap flight crew and determined that all were current and qualified to perform flight duties on the day of the mishap, and their qualifications were not a factor in the mishap. The Board also reviewed flight crew and maintenance preflight activities, as well as recent maintenance practices at the deployed location, and determined these areas were also not factors in the mishap. The Board determined the mission on this day was conducted in accordance with applicable operations directives, instructions and procedures and were not a factor in the mishap.

The recovered mass mounting bracket, attachment bolts and weights were sent to the Material Analysis Branch, Flight/Mechanical Systems Division, Engineering and Technical Management Directorate, WR-ALC, Robins Air Force Base, Georgia. The Analysis Branch determined the main rotor head weight mounting bolts failed as a result of fatigue. The evidence indicated there were several contributing factors that may have pre-disposed the fasteners (bolt and nut combination) to fatigue failure.

Analysis determined the underside of the bracket had some hidden corrosion. The technical order (T.O. 1H-53(M)J-2-4) requires sealant to be used on the bottom surface of the bracket to prevent corrosion. The technicians did not find this sealant, leading the Board to believe it was not applied during original installation. This lack of sealant and resultant corrosion could have adversely affected the retention of the required clamping forces of the bracket to the blade sleeve, allowing the outer bolt to move or shift slightly with dynamic forces causing eventual cracking and failure.

Finally, the investigation found the mounting bolts did not conform to the specifications set out in the maintenance operating procedures (T.O. 1H-53(M)J-2-4). Analysis determined a slight mismatch between the bolt and the nut threads, which could have created a non-uniform clamping force, allowing a slight vibration that contributed to fatigue and failure of the fastener. Additionally, the bolts recovered from the mishap aircraft were of slightly lower tensile strength and had partial decarburization, which could have pre-disposed the fasteners to fatigue and failure. Decarburization is a breakdown in the heat-treatment process used to harden the bolts when they are manufactured. This breakdown can result in a weaker material, making it more susceptible to fatigue and failure.

4. CONCLUSION

Clear and convincing evidence shows the bolts that attached the mounting bracket and weights to the rotor head sleeve failed as a result of fatigue. When these two bolts failed, the weights and bracket flew into the rotor head, damaging two blades.

18 July 2003

PAUL R. HARMON, Colonel, USAF
President, Accident Investigation Board

INDEX OF TABS

TAB R: DIAGRAMS

TAB S: PHOTOGRAPHS

TAB T: INDIVIDUAL FLIGHT RECORDS AND ORDERS (NOT INCLUDED IN TAB G)
NONE

TAB U: AIRCRAFT MAINTENANCE RECORDS (NOT INCLUDED IN TABS H OR O)

TAB V: WITNESS TESTIMONY AND STATEMENTS

THE FOLLOWING WITNESSES WERE INTERVIEWED BY THE SAFETY INVESTIGATION BOARD (SIB), BUT THEIR TESTIMONY WAS DETERMINED TO BE REDUNDANT AND IS NOT INCLUDED IN TAB S:

TSGT STEPHEN ZEIDERS	20 SOS	Flight Engineer
TSGT TODD BUICE	20 SOS	Instructor Flight Engineer
TSGT AARON BETTISON	20 SOS	Tail Scanner
AMN ERIC EZELL	20 SOS	Left Scanner
SSGT SHAWN HEMINGER	16 MXG	Phase Inspection Team Member
TSGT THOMAS SCHREUDER	16 HMXS	Maintenance Technician
TSGT DARREL BIBLE	16 MXG	Maintenance Technician
MSGT MICHAEL REISIGL	16 MXG	Production Superintendent
TSGT CRAIG KORNERLY	16 HMXS	Maintenance Technician
SRA RUSTY W. KAMENICKY	16 HMXS	Crew Chief
SRA MORGAN MCCORMICK	16 EMS (FTD)	Maintenance Technician
MAJ MICHAEL PROFIT	WR-ALC/SEM	Chief of Safety, Materiel Division

TAB G

FLIGHT AND PERSONNEL RECORDS

INTENTIONALLY

LEFT

BLANK

I. MISHAP PILOT (MP) FLYING HISTORY REPORT

Crew flying histories were determined not to be a factor. This mishap was originally considered a Class C, maintenance-related mishap. Flight histories were not gathered for the crew until the formation of the SIB. The attached documents were gathered on 28 May 03 and include 6.7 mishap flight hours.

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552A)

PREPARED 03 MAY 29 11:10 FLYING HISTORY REPORT (PA) AS OF 03 MAY 29 PCN SA036-F40

INQUIRY

NAME: GROVES, JOHN M SSAN: GRADE: CPT API: 1 FAC: 1 OFDA: 85 ASC: 1A ASC DATE: 02 OCT 97
CMD: SOC WING: 00165OPWG PRI CRW POS: P PRI ACFT: MH053M UNIT: 0020SOPSQ0 BASE: HURLBURT FIELD

AIRCRAFT TOTALS

AIRCRAFT MDS	MH053M	MH053J	MH053J	SMH053J	STH053A	SUH001N	TH053A	UH001N
FLT DTY CERT CODE	MP	MC	MP	MP	MC	MC	MC	MC
DATE FIRST FLOWN	11 MAR 01	16 FEB 00	04 OCT 99	20 JUL 99	NO DATE	06 OCT 97	NO DATE	14 JUL 97
DATE LAST FLOWN	28 MAY 03	15 JUL 02	11 NOV 02	23 OCT 02	NO DATE	04 MAY 98	NO DATE	21 OCT 98
TOTAL TIME	198.0	71.5	112.2	102.2	0.0	18.0	0.0	319.4
PRIMARY TIME	87.2	37.2	59.8	52.1	0.0	12.0	0.0	163.1
SECONDARY TIME	81.7	14.3	24.1	50.1	0.0	6.0	0.0	105.7
INSTRUCTOR TIME	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EVALUATOR TIME	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER TIME	29.1	20.0	28.3	0.0	0.0	0.0	0.0	50.6
PRIMARY NIGHT	43.0	19.3	51.0	2.0	0.0	0.0	0.0	23.2
PRIMARY INST	4.4	0.7	5.1	0.0	0.0	0.0	0.0	3.9
PRIMARY SIM INST	8.2	2.6	1.0	2.0	0.0	3.0	0.0	18.6
NVG TIME	75.9	25.7	70.4	6.5	0.0	0.0	0.0	34.7
COMBAT TIME	69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CMBT SUPPORT TIME	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COMBAT SORTIES	20	0	0	0	0	0	0	0
CMBT SUPPORT SORTIES	1	0	0	0	0	0	0	0
TOTAL SORTIES	78	21	43	27	0	8	0	193

PAGE 1

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

PAGE 1

PREPARED 03 MAY 29 11:10 FLYING HISTORY REPORT (PA) AS OF 03 MAY 29 PCN SA036-F40

INQUIRY

NAME: GROVES, JOHN M SSAN: GRADE: CPT API: 1 FAC: 1 OFDA: 85 ASC: 1A ASC DATE: 02 OCT 97
CMD: SOC WING: 0016SOPWG PRI CRW POS: P PRI ACFT: MH053M UNIT: 0020SOPSQ0 BASE: HURLBURT FIELD

AIRCRAFT TOTALS

AIRCRAFT MDS	UH001N	TH053A	SUH001N	STH053A	SMH053M	SMH053J	MH053M
FLT DTY CERT CODE	MP	UP	MP	UP	MC	MC	MC
DATE FIRST FLOWN	14 JUL 97	18 JUN 99	09 MAR 99	24 MAY 99	20 FEB 02	08 JAN 01	14 FEB 00
DATE LAST FLOWN	21 APR 99	24 AUG 99	12 MAR 99	27 AUG 99	20 FEB 02	08 AUG 01	13 FEB 03
TOTAL TIME	143.6	68.8	12.0	42.8	4.0	17.6	415.6
PRIMARY TIME	75.9	33.1	6.0	21.4	2.0	8.8	209.8
SECONDARY TIME	62.5	7.3	6.0	21.4	2.0	8.8	148.6
INSTRUCTOR TIME	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EVALUATOR TIME	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER TIME	5.2	28.4	0.0	0.0	0.0	0.0	57.2
PRIMARY NIGHT	10.0	1.1	0.0	0.0	0.0	2.0	106.5
PRIMARY INST	3.8	0.0	0.0	0.0	0.0	0.0	9.2
PRIMARY SIM INST	10.0	0.0	5.0	7.9	2.0	0.0	13.6
NVG TIME	19.7	0.0	0.0	0.0	0.0	9.0	203.3
COMBAT TIME	0.0	0.0	0.0	0.0	0.0	0.0	47.0
CMBT SUPPORT TIME	0.0	0.0	0.0	0.0	0.0	0.0	39.0
COMBAT SORTIES	0	0	0	0	0	0	17
CMBT SUPPORT SORTIES	0	0	0	0	0	0	21
TOTAL SORTIES	81	33	8	15	2	5	182

PAGE 2

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

PREPARED 03 MAY 29 11:10 FLYING HISTORY REPORT (PA) AS OF 03 MAY 29 PCN SA036-F40

INQUIRY

NAME: GROVES, JOHN M SSAN: GRADE: CPT API: 1 FAC: 1 OFDA: 85 ASC: 1A ASC DATE: 02 OCT 97
CMD: SOC WING: 0016SOPWG PRI CRW POS: P PRI ACFT: MH053M UNIT: 0020SOPSQ0 BASE: HURLBURT FIELD

CAREER TOTALS

CREW POSITION	PILOT
PRIMARY TIME	666.1
SECONDARY TIME	444.2
INSTRUCTOR TIME	0.0
EVALUATOR TIME	0.0
OTHER TIME	218.8
TOTAL TIME	1329.1
STUDENT TIME	196.2
OTHER US MIL TIME	0.0
FOREIGN MIL TIME	0.0
CIVILIAN TIME	0.0
COMBAT TIME	116.0
COMBAT SUPT TIME	39.7
TOTAL SORTIES	631
COMBAT SORTIES	37
COMBAT SUP SORTIES	22
NVG TIME	429.7
DATE FIRST FLOWN	14 JUL 97
DATE LAST FLOWN	28 MAY 03
GRAND TOTAL	1525.3

PAGE 3

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

INTENTIONALLY

LEFT

BLANK

II. MP 30/60/90 DAY FLYING HISTORY

The below flight times are as of 21 May 03 and do not include the mishap flight hours.

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

PREPARED 11 JUN 2003 10:18 REPORT OF AIRCRAFT ACCIDENT INVESTIGATION (PA) AS OF 11 JUN 2003 PCN SA036-F20

NAME: GROVES, JOHN M GRADE: CPT SSAN: API: 1 FAC: 1 ASC: 1A DAFSC: S11S3A AGE:

CMD: SOC WING: 0016SOPWG ORGANIZATION: 0020SOPSQ CREW POSITION: MP ASC DATE: 02 OCT 1997
CURR RATING: PILOT AIRCRAFT TYPE: MH053M SERIAL NUMBER: 1648

*** ACCIDENT AIRCRAFT ***

	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT
MH053M	305.1	239.4	0.0	0.0	86.3	630.8	305.1	155.6	13.6	21.8	270
LAST 30 DAYS	10.0	7.9	0.0	0.0	7.2	25.1	10.0	5.4	0.0	0.6	8
LAST 60 DAYS	23.3	22.1	0.0	0.0	7.2	52.6	23.3	13.6	0.0	1.4	19
LAST 90 DAYS	37.3	34.5	0.0	0.0	8.0	79.8	37.3	24.4	0.0	2.0	29

as of 21 May 03

*** OTHER ACTIVE AIRCRAFT ***

	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT

*** CAREER TOTALS ***

FIRST FLIGHT LAST FLIGHT	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST TIME	STUDENT	COMBAT	COMBAT	SORT
14 JUL 97 10 JUN 03	674.2	453.3	0.0	0.0	218.8	1346.3	674.2	196.2	131.5	39.7	641

PAGE 1

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

INTENTIONALLY

LEFT

BLANK

III. MP AF FORM 942

RECORD OF EVALUATION

NAME (Last, First, Middle Initial): GROVES, JOHN M. SSN:

TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETED	QUALIFICATION LEVEL (COMMAND)	TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETED	QUALIFICATION LEVEL (COMMAND)
	Assigned 512 SOS		(AETC)				
UH-1N	INTL QUAL/INSTM	27 Aug 1997	1 (AETC)				
UH-1N	INTL MSN (Day Remotes)	17 Sep 1997	1 (AETC)				
	Assiggned 76 RQF		(AFSPC)				
UN-1N	INTL MSN	17 Nov 1997	1 (AFSPC)				
UH-1N	INTL MSN	7 Jan 1998	1 (AFSPC)				
UN-1N	INTL MSN	29 Jan 1998	1 (AFSPC)				
	Annual Review	17 Mar 1998	(AFSPC)				
UH-1N	INIT MSN	31 Aug 1998	1 (AFSPC)				
UH-1N	INIT QUAL/INSTM	13 Oct 1998	1 (AFSPC)				
UH-1N	INIT MSN	19 Oct 1998	1 (AFSPC)				
UH-1N	INIT MSN	28 Oct 1998	1 (AFSPC)				
	Annual Review	5 Mar 1999	(AFSPC)				
	Assigned 551 SOS	30 Apr 1999	(AETC)				
TH-53A	INIT SIM-INSTM	-					
	INIT QUAL	7 Jul 1999	1 (AETC)				
MH-53J	INIT MSN	13 Jan 2000	1 (AETC)				
	Assigned 20 SOS	28 Jan 2000	(AFSOC)				
	Annual Review	15 Mar 2000	(AFSOC)				
MH-53M	QUAL/INSTM	5 Aug 2000	1 (AFSOC)				
MH-53M	INIT QUAL/INSTM	24 Jan 2001	1 (AFSOC)				
	Annual Review	30 Mar 2001	(AFSOC)				
MH-53M	MSN	1 Jun 2001	1 (AFSOC)				
MH-53M	N/N QUAL/INSTM	6 Dec 2001	1 (AFSOC)				
	Annual Review	25 Mar 2002	(AFSOC)				
MH-53J	INIT MSN	20 Jul 2002	1 (AFSOC)				

AF FORM 942, DEC 96 (EF-V1) (PerFORM PRO) PREVIOUS EDITIONS ARE OBSOLETE.

INTENTIONALLY

LEFT

BLANK

IV. MP FORM 8, 2 MAR 03

DRAFT

CERTIFICATE OF AIRCREW QUALIFICATION			DATE COMPLETED 2 Mar 03
I. EXAMINEE IDENTIFICATION			
NAME: Groves, John M.	GRADE: Capt	SSAN:	
ORGANIZATION AND LOCATION: 20 SOS, Hurlburt Field, FL	ACFT/CREW POSITION: MH-53M/MP	ELIGIBILITY PERIOD: Oct 02 - Mar 03	

II. QUALIFICATION

GROUND PHASE			FLIGHT PHASE	
EXAMINATION/CHECK	DATE	GRADE	MISSION/CHECK	DATE
Open Book	23 Jan 03	100	QUAL/INSTM	2 Mar 03
Closed Book	27 Jan 03	96		
EPE	2 Mar 03	1		
Boldface/CAPs	2 Mar 03	Q		
IRC	22 Jan 03	92		

QUALIFICATION LEVEL		RESTRICTION (Explain in Comments)	ADDITIONAL TRAINING
QUALIFIED	UNQUALIFIED		DUE DATES
1		YES _ NO X	N/A
EXPIRATION DATE OF QUALIFICATION: Aug 04			DATE ADDITIONAL TRAINING COMPLETED: N/A

COMMENTS (If more space is needed, continue on reverse)

EXAMINER'S REMARKS:

A. Mission Description. This evaluation was completed at a deployed location and consisted of emergency procedures and transition maneuvers. Instruments were evaluated in the deployed radar traffic pattern. All applicable areas of AFI 11-2MH-53V2 were completed in a satisfactory manner.

B. Discrepancies. None.

III. CERTIFICATION

	TYPED NAME AND GRADE	ORGANIZATION	CHECK: QUALIFIED	CHECK: NOT QUALIFIED	CHECK: RESTRICTIONS	SIGNATURE	DATE
1	FLIGHT EXAMINER: David H. Tabor, Capt	20SOS/CCE			X		3 Mar 03
2	REVIEWING OFFICER: Foster E. Gerhart, Maj	20 SOS/DOO	X				20 Mar 03
3	FINAL APPROVING OFFICER: Foster E. Gerhart, Maj	20 SOS/DOO	X				20 Mar 03

I CERTIFY that I have been briefed and understand the action being taken this date.

DATE	TYPED NAME AND GRADE OF EXAMINEE	SIGNATURE
	John M. Groves, Capt	

AF Form 8, May 85 (CG) (SEMS Pro) PREVIOUS EDITION WILL BE USED

CERTIFICATE OF AIRCREW QUALIFICATION

DATE COMPLETED: 20 Jul 02

I. EXAMINEE IDENTIFICATION

NAME	GRADE	SSAN
Groves, John M.	Capt	

ORGANIZATION AND LOCATION	ACFT/CREW POSITION	ELIGIBILITY PERIOD
551 SOS, Kirtland AFB NM	MH-53J/MP	N/A

II. QUALIFICATION

GROUND PHASE			FLIGHT PHASE	
EXAMINATION/CHECK	DATE	GRADE	MISSION/CHECK	DATE
Closed Book	9 Jul 02	100	INIT MSN	20 Jul 02
Open Book	9 Jul 02	100		
EPE	19 Jul 02	1		
Bold Face/CAPs	19 Jul 02	Q		

QUALIFICATION LEVEL		RESTRICTION (Explain in Comments)	ADDITIONAL TRAINING
QUALIFIED	UNQUALIFIED		DUE DATES
1		[X] YES [ ] NO	N/A
EXPIRATION DATE OF QUALIFICATION: Dec 03			DATE ADDITIONAL TRAINING COMPLETED: N/A

COMMENTS (If more space is needed, continue on reverse)

RESTRICTION: Individual not qualified to perform Night Water Operations.

III. CERTIFICATION

	TYPED NAME AND GRADE	ORGANIZATION	CHECK: CONCUR	CHECK: DO NOT CONCUR	CHECK: REMARKS	SIGNATURE	DATE
1	FLIGHT EXAMINER Lance E. Bodine, Lt Col	551 SOS/DO			X		23 JUL 02
2	REVIEWING OFFICER Steven Plumhoff, Capt	551 SOS/DOV	X				23 July 02
3	FINAL APPROVING OFFICER Timothy J. Leahy, Lt Col	551 SOS/CC	X				23 July 02

I CERTIFY that I have been briefed and understand the action being taken this date.

DATE	TYPED NAME AND GRADE OF EXAMINEE	SIGNATURE
1 AUG 02	JOHN M. GROVES, Capt	

AF Form 8, May 85 (CG) (SEMS Pro) PREVIOUS EDITION WILL BE USED

V. MISHAP CO-PILOT (MC) FLYING HISTORY REPORT

Crew flying histories were determined not to be a factor. This mishap was originally considered a Class C, maintenance-related mishap. Flight histories were not gathered for the crew until the formation of the SIB. The attached documents were gathered on 28 May 03 and include 6.7 mishap flight hours.

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552A)

PREPARED 03 MAY 29 11:09 FLYING HISTORY REPORT (PA) AS OF 03 MAY 29 PCN SA036-F40

INQUIRY

NAME: LANCIST JR, FRANCIS W SSAN: GRADE: LIT AFI: 1 FAC: 1 OTDA: 159 ASC: ZA ASC DATE: 27 FEB 02
CMD: SOC WING:0016SOPWG PRI CRW POS: P PRI ACFT: MH053M UNIT: 0020SOPSQ0 BASE: EURLBURT FIELD

AIRCRAFT TOTALS

AIRCRAFT MDS	MH053M	MH053J	SMH053M	SMH053J	MH053M	MH053J	STH053A	TH053A
FLT DTY CERT CODE	MC	MC	MC	MC	FP	UP	UP	UP
DATE FIRST FLOWN	15 AUG 01	21 SEP 01	08 JUN 01	10 JUN 02	NO DATE	05 MAR 01	NO DATE	01 NOV 00
DATE LAST FLOWN	28 MAY 03	06 SEP 02	11 JUN 02	03 SEP 02	NO DATE	01 JUN 01	NO DATE	31 JAN 01
TOTAL TIME	382.3	34.7	26.0	9.0	0.0	86.1	0.0	53.1
PRIMARY TIME	190.0	16.1	13.0	4.5	0.0	39.8	0.0	34.2
SECONDARY TIME	152.2	13.5	13.0	4.5	0.0	13.2	0.0	6.8
INSTRUCTOR TIME	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EVALUATOR TIME	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER TIME	40.1	5.1	0.0	0.0	0.0	33.1	0.0	12.1
PRIMARY NIGHT	90.0	5.6	0.0	0.0	0.0	36.8	0.0	1.3
PRIMARY INST	9.5	0.0	0.0	0.0	0.0	3.3	0.0	0.4
PRIMARY SIM INST	9.1	1.9	3.0	0.0	0.0	1.5	0.0	0.3
NVG TIME	159.1	10.2	0.0	0.0	0.0	44.8	0.0	0.0
COMBAT TIME	120.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CMBT SUPPORT TIME	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COMBAT SORTIES	61	0	0	0	0	0	0	0
CMBT SUPPORT SORTIES	0	0	0	0	0	0	0	0
TOTAL SORTIES	189	17	8	5	0	23	0	22

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552A)

PREPARED 03 MAY 29 11:09 FLYING HISTORY REPORT (PA) AS OF 03 MAY 29 PCN SA036-F40

INQUIRY

NAME: LANKIST JR, FRANCIS W SSAN: GRADE: 1LT API: 1 FAC: 1 OFDA: 159 ASC: 2A ASC DATE: 27 FEB 02
CMD: SOC WING: 0016SOPWG PRI CRW POS: P PRI ACFT: MH053M UNIT: 0020SOPSQ0 BASE: HURLBURT FIELD

AIRCRAFT TOTALS

AIRCRAFT MDS	SMH053J
FLT DTY CERT CODE	UP
DATE FIRST FLOWN	27 SEP 00
DATE LAST FLOWN	04 MAY 01
TOTAL TIME	130.3
PRIMARY TIME	67.2
SECONDARY TIME	63.1
INSTRUCTOR TIME	0.0
EVALUATOR TIME	0.0
OTHER TIME	0.0
PRIMARY NIGHT	5.0
PRIMARY INST	0.0
PRIMARY SIM INST	0.0
NVG TIME	9.5
COMBAT TIME	0.0
CMBT SUPPORT TIME	0.0
COMBAT SORTIES	0
CMBT SUPPORT SORTIES	0
TOTAL SORTIES	33

CAREER TOTALS

CREW POSITION	PILOT
PRIMARY TIME	280.1
SECONDARY TIME	185.7
INSTRUCTOR TIME	0.0
EVALUATOR TIME	0.0
OTHER TIME	90.4
TOTAL TIME	556.2
STUDENT TIME	0.0
OTHER US MIL TIME	2266.9
FOREIGN MIL TIME	0.0
CIVILIAN TIME	0.0
COMBAT TIME	120.1
COMBAT SUPT TIME	0.0
TOTAL SORTIES	251
COMBAT SORTIES	61
COMBAT SUP SORTIES	0
NVG TIME	214.1
DATE FIRST FLOWN	01 NOV 00
DATE LAST FLOWN	28 MAY 03
GRAND TOTAL	2823.1

PAGE 2

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

VI. MC 30/60/90 DAY FLYING HISTORY

The below flight times are as of 21 May 03 and do not include the mishap flight hours.

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

PREPARED 11 JUN 2003 10:19 REPORT OF AIRCRAFT ACCIDENT INVESTIGATION (PA) AS OF 11 JUN 2003 PCN SA036-F20

NAME: LANKIST JR, FRANCIS W GRADE: 1LT SSAN: API: 1 FAC: 1 ASC: 2A DAFSC: 011S3A AGE:

CMD: SOC WING: 0016SOPWG ORGANIZATION: 0020SOPSQ CREW POSITION: MC ASC DATE: 27 FEB 2002
CURR RATING: SENIOR PILOT AIRCRAFT TYPE: MH053M SERIAL NUMBER: 1648

*** ACCIDENT AIRCRAFT ***

	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT
MH053M	194.5	155.7	0.0	0.0	40.1	390.3	194.5	92.0	9.5	9.4	194
LAST 30 DAYS	20.3	10.7	0.0	0.0	11.1	42.1	20.3	11.9	0.0	1.6	17
LAST 60 DAYS	34.5	24.0	0.0	0.0	11.1	69.6	34.5	20.7	0.0	2.4	28
LAST 90 DAYS	46.5	36.4	0.0	0.0	11.1	94.0	46.5	29.7	0.0	2.4	37
MH053M	194.5	155.7	0.0	0.0	40.1	390.3	194.5	92.0	9.5	9.4	194
LAST 30 DAYS	20.3	10.7	0.0	0.0	11.1	42.1	20.3	11.9	0.0	1.6	17
LAST 60 DAYS	34.5	24.0	0.0	0.0	11.1	69.6	34.5	20.7	0.0	2.4	28
LAST 90 DAYS	46.5	36.4	0.0	0.0	11.1	94.0	46.5	29.7	0.0	2.4	37

as of 21 May 03

*** OTHER ACTIVE AIRCRAFT ***

	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT
MH053J	55.9	26.7	0.0	0.0	38.2	120.8	55.9	42.4	3.3	3.4	40
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
SMH053M	13.0	13.0	0.0	0.0	0.0	26.0	13.0	0.0	0.0	3.0	8
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0

PAGE 1

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

INTENTIONALLY

LEFT

BLANK

VII. MC AF FORM 942

RECORD OF EVALUATION							
NAME (Last, First, Middle Initial) LANKIST, FRANCIS W. Jr.					SSN		
TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETED	QUALIFICATION LEVEL (COMMAND)	TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETED	QUALIFICATION LEVEL (COMMAND)
	Assigned 551 SOS	14 Aug 2000	(AETC)				
	Annual Review	14 Aug 2000	(AETC)				
TH-53A	INIT SIM-INSTM	31 Oct 2000	1 (AETC)				
TH-53A	INIT QUAL	13 Nov 2000	3 (AETC)				
TH-53A	INIT QUAL	17 Nov 2000	1 (AETC)				
MH-53J	INIT MSN	21 Mar 2001	3 (AETC)				
MH-53J	INIT MSN	1 Jun 2001	1 (AETC)				
	Assigned 20 SOS	10 Jul 2001	(AFSOC)				
	Annual Review	13 Aug 2001	(AFSOC)				
MH-53M	QUAL/INSTM	21 Dec 2001	1 (AFSOC)				
	Annual Review	6 Aug 2002	(AFSOC)				
MH-53M	MSN	16 Oct 2002	1 (AFSOC)				
	Annual Review	15 Apr 2003	(AFSOC)				

AF FORM 942, DEC 96 *(EF-V1)* (PerFORM PRO) PREVIOUS EDITIONS ARE OBSOLETE.

INTENTIONALLY

LEFT

BLANK

VIII. MC FORM 8, 13 MAY 03

******************** DRAFT COPY 21 May 03 ********************

CERTIFICATE OF AIRCREW QUALIFICATION — DATE COMPLETED: 13 May 03

I. EXAMINEE IDENTIFICATION

NAME	GRADE	SSAN
Lankist, Francis W. Jr.	1Lt	

ORGANIZATION AND LOCATION	ACFT/CREW POSITION	ELIGIBILITY PERIOD
20 SOS, Hurlburt Field, FL	MH-53M/FP	N/A

II. QUALIFICATION

GROUND PHASE			FLIGHT PHASE	
EXAMINATION/CHECK	DATE	GRADE	MISSION/CHECK	DATE
Open Book	10 Jan 03	98	INIT QUAL/INSTM	13 May 03
Closed Book	22 Jan 03	100		
EPE	13 May 03	1		
Boldface/CAPs	22 Jan 03	Q		
IRC	17 Jan 03	86		

QUALIFICATION LEVEL		RESTRICTION (Explain in Comments)	ADDITIONAL TRAINING
QUALIFIED	UNQUALIFIED	YES X NO	DUE DATES
1			N/A
EXPIRATION DATE OF QUALIFICATION: Oct 04			DATE ADDITIONAL TRAINING COMPLETED: N/A

COMMENTS (If more space is needed, continue on reverse)

EXCEPTIONALLY QUALIFIED

EXAMINER'S REMARKS:

A. Mission Description. Sortie flown while deployed to Horn of Africa and consisted of ICAO instrument procedures at an international airfield followed by transition and EP maneuvers. All areas of AFI 11-2MH-53 Vol 2, Tables 2-4 were evaluated. PAR was verbally evaluated due to non-availability. Lt Lankist demonstrated exceptional situational awareness, knowledge of instrument procedures, and aircraft control.
B. Discrepancies. NONE. (continued on reverse)

III. CERTIFICATION

	TYPED NAME AND GRADE	ORGANIZATION	CHECK: GROUND	CHECK: FLIGHT	CHECK: STANDARDS	SIGNATURE	DATE
1	FLIGHT EXAMINER: James C. Slife, Lt Col	20 SOS/DO			X		13 May 03
2	REVIEWING OFFICER: James C. Slife, Lt Col	20 SOS/DO			X		14 May 03
3	FINAL APPROVING OFFICER: James C. Slife, Lt Col	AFSOD-A/CC	X				14 May 03

I CERTIFY that I have been briefed and understand the action being taken this date.

DATE	TYPED NAME AND GRADE OF EXAMINEE	SIGNATURE
	Francis W. Lankist Jr., 1Lt	

AF Form 8, May 85 (CG) (SEMS Pro) PREVIOUS EDITION WILL BE USED

CERTIFICATE OF AIRCREW QUALIFICATION

DATE COMPLETED: 16 Oct 02

I. EXAMINEE IDENTIFICATION

NAME	GRADE	SSAN
Lankist, Francis W. Jr.	1Lt	

ORGANIZATION AND LOCATION	ACFT/CREW POSITION	ELIGIBILITY PERIOD
20 SOS, Hurlburt Field, FL	MH-53M/MC	Jun - Nov 02

II. QUALIFICATION

GROUND PHASE			FLIGHT PHASE	
EXAMINATION/CHECK	DATE	GRADE	MISSION/CHECK	DATE
Open Book	29 Aug 02	100	MSN	16 Oct 02
Closed Book	19 Sep 02	100		
EPE	16 Oct 02	1		

QUALIFICATION LEVEL		RESTRICTION (Explain in Comments)	ADDITIONAL TRAINING
QUALIFIED	UNQUALIFIED		DUE DATES
1		___ YES X NO	N/A
EXPIRATION DATE OF QUALIFICATION			DATE ADDITIONAL TRAINING COMPLETED
Mar 04			N/A

COMMENTS (If more space is needed, continue on reverse)

EXAMINER'S REMARKS:

A. Mission Description. This evaluation was conducted at a classified location with 76% illumination. All areas were completed IAW AFI 11-2MH-53, Volume 2.

B. Discrepancies. None.

III. CERTIFICATION

	TYPED NAME AND GRADE	ORGANIZATION	CHECK: CONCUR	CHECK: NON-CONCUR	CHECK: REMARKS	SIGNATURE	DATE
1	FLIGHT EXAMINER: Foster E. Gerhart, Maj	20 SOS/DOO			X		16 OCT 02
2	REVIEWING OFFICER: William S. Berner, Maj	20 SOS/DOV	X				18 Oct 02
3	FINAL APPROVING OFFICER: Marshall B. Webb, Lt Col	20 SOS/CC	X				21 OCT 02

I CERTIFY that I have been briefed and understand the action being taken this date.

DATE	TYPED NAME AND GRADE OF EXAMINEE	SIGNATURE
7 Jan 03	Francis W. Lankist Jr., 1Lt	

AF Form 8, May 85 (CG) (SEMS Pro) PREVIOUS EDITION WILL BE USED

IX. MISHAP FLIGHT ENGINEER (MFE) FLYING HISTORY REPORT

Crew flying histories were determined not to be a factor. This mishap was originally considered a Class C, maintenance-related mishap. Flight histories were not gathered fro the crew until the formation of the SIB. The attached documents were gathered on 28 May 03 and include 6.7 mishap flight hours.

PERSONAL DATA PRIVACY ACT OF 1974 (5 USC 552A)

PREPARED 03 MAY 29 11:06 FLYING HISTORY REPORT (PA) AS OF 03 MAY 29 PCN SA036-F40

INQUIRY

NAME: ZEIDERS, STEPHEN G SSAN: GRADE: TSG API: FAC: OFDA: ASC: AA ASC DATE: 15 JUL 02
CMD: SOC WING: 0016SOPWG PRI CRW POS: F PRI ACFT: MH053M UNIT: 0020SOPSQ0 BASE: HURLBURT FIELD

AIRCRAFT TOTALS

AIRCRAFT MDS	MH053M	MH053J	SMH053J	SMH053M
FLT DTY CERT CODE	FF	FF	FF	FF
DATE FIRST FLOWN	07 OCT 02	13 SEP 01	23 AUG 01	09 MAY 02
DATE LAST FLOWN	28 MAY 03	24 JUN 02	26 FEB 02	16 MAY 02
TOTAL TIME	79.2	192.4	111.6	15.0
PRIMARY TIME	71.6	183.7	92.7	15.0
SECONDARY TIME	0.5	0.0	3.4	0.0
INSTRUCTOR TIME	0.0	0.0	0.0	0.0
EVALUATOR TIME	0.0	0.0	0.0	0.0
OTHER TIME	7.1	8.7	15.5	0.0
PRIMARY NIGHT	34.3	89.4	2.0	0.0
PRIMARY INST	0.0	0.0	0.0	0.0
PRIMARY SIM INST	0.0	0.0	0.0	0.0
NVG TIME	25.5	43.6	0.0	0.0
COMBAT TIME	47.4	0.0	0.0	0.0
CMBT SUPPORT TIME	0.0	0.0	0.0	0.0
COMBAT SORTIES	21	0	0	0
CMBT SUPPORT SORTIES	0	0	0	0
TOTAL SORTIES	34	72	36	5

CAREER TOTALS

CREW POSITION	FLIGHT ENG
PRIMARY TIME	255.3
SECONDARY TIME	0.5
INSTRUCTOR TIME	0.0
EVALUATOR TIME	0.0
OTHER TIME	15.8
TOTAL TIME	271.6
STUDENT TIME	0.0
OTHER US MIL TIME	0.0
FOREIGN MIL TIME	0.0
CIVILIAN TIME	0.0
COMBAT TIME	47.4
COMBAT SUPT TIME	0.0
TOTAL SORTIES	106
COMBAT SORTIES	21
COMBAT SUP SORTIES	0
NVG TIME	69.1
DATE FIRST FLOWN	13 SEP 01
DATE LAST FLOWN	28 MAY 03
GRAND TOTAL	271.6

PAGE 1

PAGE 1

PERSONAL DATA PRIVACY ACT OF 1974 (5 USC 552a)

INTENTIONALLY

LEFT

BLANK

X. MFE 30/60/90 DAY FLYING HISTORY

The below flight times are as of 21 May 03 and do not include the mishap flight hours.

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

PREPARED 11 JUN 2003 10:20 REPORT OF AIRCRAFT ACCIDENT INVESTIGATION (RA) AS OF 11 JUN 2003 PCN SA036-F20

NAME: ZEIDERS, STEPHEN G GRADE: TSGT SSAN: API: A FAC: A ASC: AA DAFSC: 1A131B AGE:

CMD: SOC WING: 0016SOPWG ORGANIZATION: 0020SOPSQ POSITION: MF ASC DATE: 15 JUL 2002
CURR RATING: AIRCRAFT TYPE: MH053M SERIAL NUMBER: 1648

*** ACCIDENT AIRCRAFT ***

	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT
MH053M	90.5	0.5	0.0	0.0	7.1	98.1	90.5	50.3	0.0	0.0	43
LAST 30 DAYS	23.8	0.0	0.0	0.0	5.3	29.1	23.8	12.8	0.0	0.0	14
LAST 60 DAYS	29.2	0.0	0.0	0.0	5.3	34.5	29.2	15.4	0.0	0.0	16
LAST 90 DAYS	29.2	0.0	0.0	0.0	5.3	34.5	29.2	15.4	0.0	0.0	16

as of 21 May 03

*** OTHER ACTIVE AIRCRAFT ***

	PRI	SEC	INST		OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT
MH053J	183.7	0.0	0.0	0.0	8.7	192.4	183.7	89.4	0.0	0.0	72
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
SMH053J	92.7	3.4	0.0	0.0	15.5	111.6	92.7	2.0	0.0	0.0	36
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
SMH053M	15.0	0.0	0.0	0.0	0.0	15.0	15.0	0.0	0.0	0.0	5
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0

*** CAREER TOTALS ***

PAGE 1

PERSONAL DATA PRIVACY ACT OF 1974 (5 USC 552a)

INTENTIONALLY

LEFT

BLANK

XI. MFE AF FORM 942

RECORD OF EVALUATION

NAME (Last, First, Middle Initial) SSN

Zeiders, Stephen

TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETE	QUALIFICATION LEVEL (COMMAND)	TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETE	QUALIFICATION LEVEL (COMMAND)
	ASSIGNED 551 SOS	3 Apr 01	(AETC)				
	ANNUAL REVIEW	4 Apr 01	(AETC)				
MH-53J	INIT QUAL	15 Oct 01	(AETC)				
	ANNUAL REVIEW	25 Jan 02	(AETC)				
MH-53J	INIT MSN	2 May 02	(AETC)				
	Assigned 20 SOS	29 Aug 02	(AFSOC)				

AF FORM 942, DEC 96 (CG) (SEMS Pro) PREVIOUS EDITIONS ARE OBSOLETE

INTENTIONALLY

LEFT

BLANK

XII. MFE FORM 8, 21 APR 03

********** DRAFT COPY 28 Apr 03 **********

CERTIFICATE OF AIRCREW QUALIFICATION — DATE COMPLETED: 21 Apr 03

I. EXAMINEE IDENTIFICATION

NAME	GRADE	SSAN
Zeiders, Stephen G.	TSgt	

ORGANIZATION AND LOCATION	ACFT/CREW POSITION	ELIGIBILITY PERIOD
20 SOS, Hurlburt Field FL	MH-53M/MF	Oct 02 - Mar 03

II. QUALIFICATION

GROUND PHASE			FLIGHT PHASE	
EXAMINATION/CHECK	DATE	GRADE	MISSION/CHECK	DATE
Open Book	10 Apr 03	100	REQUAL QUAL	21 Apr 03
Closed Book	14 Apr 03	96		
Boldface/CAPs	21 Apr 03	Q		
EPE	21 Apr 03	1		

QUALIFICATION LEVEL		RESTRICTION (Explain in Comments)	ADDITIONAL TRAINING
QUALIFIED	UNQUALIFIED		DUE DATES
1		YES X NO	N/A
EXPIRATION DATE OF QUALIFICATION			DATE ADDITIONAL TRAINING COMPLETED
Sep 04			N/A

COMMENTS (if more space is needed, continue on reverse)

EXAMINER'S REMARKS:

A. Mission Description. Requalification evaluation was completed in Hurlburt Field traffic pattern. This RE QUAL evaluation was due to crewmember going overdue QUAL evaluation due to non flying TDY and extended DNIF. All applicable areas of AFI 11-2MH53V2 were accomplished in a satisfactory manner.

B. Discrepancies. None

III. CERTIFICATION

	TYPED NAME AND GRADE	ORGANIZATION	CHECK: CONCUR	CHECK: DO NOT CONCUR	CHECK: REMARKS	SIGNATURE	DATE
1	FLIGHT EXAMINER: George P. Levkulich, MSgt	HQ AFSOC/DOXT			X	GP Levkulich	28 APR 03
2	REVIEWING OFFICER: Paul E. Pereira, Maj	20 SOS/DOT	X				
3	FINAL APPROVING OFFICER: Foster E. Gerhart, Maj	20 SOS/DOO	X				

I CERTIFY that I have been briefed and understand the action being taken this date.

DATE	TYPED NAME AND GRADE OF EXAMINEE	SIGNATURE
	STEPHEN ZEIDERS G., TSgt	

AF Form 8, May 85 (CG) (SEMS Pro) PREVIOUS EDITION WILL BE USED

CERTIFICATE OF AIRCREW QUALIFICATION

DATE COMPLETED: 2 May 02

I. EXAMINEE IDENTIFICATION

NAME	GRADE	SSAN
Zeiders, Stephen G.	TSgt	

ORGANIZATION AND LOCATION	ACFT/CREW POSITION	ELIGIBILITY PERIOD
551 SOS, Kirtland AFB NM	MH-53J/MF	N/A

II. QUALIFICATION

GROUND PHASE			FLIGHT PHASE	
EXAMINATION/CHECK	DATE	GRADE	MISSION/CHECK	DATE
Open Book	22 Apr 02	100	INIT MSN	2 May 02
Closed Book	22 Apr 02	97		
EPE	2 May 02	1		
Bold Face/CAPs	2 May 02	Q		

QUALIFICATION LEVEL		RESTRICTION (Explain in Comments)	ADDITIONAL TRAINING
QUALIFIED	UNQUALIFIED	☐ YES ☒ NO	DUE DATES: N/A
1			
EXPIRATION DATE OF QUALIFICATION: Oct 03			DATE ADDITIONAL TRAINING COMPLETED: N/A

COMMENTS *(if more space is needed, continue on reverse)*

EXAMINER'S REMARKS:
A. Mission Description. 22 Mar 02, Initial Mission EV-4A (Init Mini-Gun) completed. This evaluation is incomplete for Area V, Subareas: 43, 44, 45, 46 (Init .50 Cal), 47, 48. Lt Col Leahy, 551 SOS/CC, was debriefed on this evaluation.
B. Discrepancies. None.

Mario M. Roiz, TSgt, 551 SOS/DOV

III. CERTIFICATION

	TYPED NAME AND GRADE	ORGANIZATION	CHECK: CONCUR	CHECK: DO NOT CONCUR	CHECK: REMARKS	SIGNATURE	DATE
1	FLIGHT EXAMINER: Kevin E. James, SSgt	551 SOS/DOV			X		6 May 02
2	REVIEWING OFFICER: Percy E. Dunagin III, Capt	551 SOS/DOV	X				8 May 02
3	FINAL APPROVING OFFICER: Timothy J. Leahy, Lt Col	551 SOS/CC	X				10 May 02

I CERTIFY that I have been briefed and understand the action being taken this date.

DATE	TYPED NAME AND GRADE OF EXAMINEE	SIGNATURE
27 Jun 02	STEPHEN G. ZEIDERS, TSgt	

AF Form 8, May 85 (CG) *(SEMS Pro)* PREVIOUS EDITION WILL BE USED

XIII. MISHAP INSTRUCTOR FLIGHT ENGINEER (MIFE) FLYING HISTORY REPORT

Crew flying histories were determined not to be a factor. This mishap was originally considered a Class C, maintenance-related mishap. Flight histories were not gathered for the crew until the formation of the SIB. The attached documents were gathered on 28 May 03 and include 6.7 mishap flight hours.

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552A)

PREPARED 03 MAY 29 11:09 FLYING HISTORY REPORT (PA) AS OF 03 MAY 29 PCN SA036-F40

INQUIRY

NAME: BUICE, TODD M SSAN: GRADE: T8G AFI: EAC: OFDR: ASC: BA ASC DATE: 29 AUG 01
CMD: SOC WING: 0016SOPWG PRI CRW POS: F PRI ACFT: MH053J UNIT: 0020SOESQ0 BASE: HURLBURT FIELD

AIRCRAFT TOTALS

AIRCRAFT MDS	MH053J	SMH053J	MH053M	CH053A	NCH053A	TH053A
FLT DTY CREW CODE	EF	EF	EF	UF	UF	IF
DATE FIRST FLOWN	11 DEC 91	19 SEP 91	19 APR 99	26 SEP 91	10 JAN 94	16 MAR 93
DATE LAST FLOWN	04 NOV 02	11 DEC 02	27 MAY 03	19 MAR 92	28 MAR 95	23 MAR 99
TOTAL TIME	1826.1	140.8	638.5	35.9	7.0	23.6
PRIMARY TIME	1657.8	112.9	417.1	35.9	7.0	23.6
SECONDARY TIME	7.9	12.0	0.0	0.0	0.0	0.0
INSTRUCTOR TIME	72.6	0.0	171.2	0.0	0.0	0.0
EVALUATOR TIME	21.2	0.0	16.4	0.0	0.0	0.0
OTHER TIME	66.7	15.9	33.8	0.0	0.0	0.0
PRIMARY NIGHT	812.2	15.3	371.5	1.0	0.0	0.0
PRIMARY INST	0.0	0.0	0.0	0.0	0.0	0.0
PRIMARY SIM INST	0.0	0.0	0.0	0.0	0.0	0.0
NVG TIME	206.3	0.0	278.9	0.0	0.0	0.0
COMBAT TIME	31.3	0.0	185.5	0.0	0.0	0.0
CMBT SUPPORT TIME	10.0	0.0	0.0	0.0	0.0	0.0
COMBAT SORTIES	17	0	70	0	0	0
CMBT SUPPORT SORTIES	2	0	0	0	0	0
TOTAL SORTIES	783	43	252	14	4	11

PAGE 1

PERSONAL DATA PRIVACY ACT OF 1974 (5 USC 552a)

PAGE 1

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552A)

PREPARED 03 MAY 29 11:09 FLYING HISTORY REPORT (PA) AS OF 03 MAY 29 PCN SA036-F40

INQUIRY

NAME: BUICE, TODD M SSAN: GRADE: TSG API: FAC: OFDA: ASC: BA ASC DATE: 29 AUG 01
CMD: SOC WING: 0016SOPWG PRI CRW POS: F PRI ACFT: MH053J UNIT: 0020SOPSQ0 BASE: HURLBURT FIELD

CAREER TOTALS

CREW POSITION	FLIGHT ENG
PRIMARY TIME	2141.4
SECONDARY TIME	7.9
INSTRUCTOR TIME	243.8
EVALUATOR TIME	37.5
OTHER TIME	100.5
TOTAL TIME	2531.1
STUDENT TIME	0.0
OTHER US MIL TIME	0.0
FOREIGN MIL TIME	0.0
CIVILIAN TIME	0.0
COMBAT TIME	216.8
COMBAT SUPT TIME	10.0
TOTAL SORTIES	1064
COMBAT SORTIES	87
COMBAT SUP SORTIES	2
NVG TIME	480.2
DATE FIRST FLOWN	19 SEP 91
DATE LAST FLOWN	27 MAY 03
GRAND TOTAL	2531.1

PAGE 2

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

XIV. MIFE 30/60/90 DAY FLYING HISTORY

The below flight times are as of 21 May 03 and do not include the mishap flight hours.

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

PREPARED 11 JUN 2003 0:21 REPORT OF AIRCRAFT ACCIDENT INVESTIGATION (PA) AS OF 11 JUN 2003 PCN SA036-F20

NAME: BUICE, TODD M GRADE: TSGT SSAN: API: A FAC: A ASC: BA DAFSC: K1A171B AGE:

CMD: SOC WING: 0016SOPWG ORGANIZATION: 0020SOPSQ CREW POSITION: EF ASC DATE: 29 AUG 2001
CURR RATING: AIRCRAFT TYPE: MH053M SERIAL NUMBER: 1648

*** ACCIDENT AIRCRAFT ***

	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT
MH053M	423.2	0.0	177.8	16.4	33.8	651.2	601.0	379.7	0.0	0.0	258
LAST 30 DAYS	21.4	0.0	11.8	0.0	0.0	33.2	33.2	12.0	0.0	0.0	12
LAST 60 DAYS	48.8	0.0	11.8	0.0	3.6	64.2	60.6	28.3	0.0	0.0	25
LAST 90 DAYS	88.8	0.0	12.8	1.4	5.5	108.5	101.6	63.0	0.0	0.0	40

*** OTHER ACTIVE AIRCRAFT ***

	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT
MH053J	1657.8	7.9	72.6	21.1	66.7	1826.1	1730.4	812.2	0.0	0.0	783
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
SMH053J	112.9	12.0	0.0	0.0	15.9	140.8	112.9	15.3	0.0	0.0	43
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0

*** CAREER TOTALS ***

FIRST FLIGHT LAST FLIGHT	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST TIME	STUDENT	COMBAT	COMBAT	SORT
19 SEP 91 09 JUN 03	2147.5	7.9	250.4	37.5	100.5	2543.8	2397.9	0.0	229.5	10.0	1070

PAGE 1

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

INTENTIONALLY

LEFT

BLANK

XV. MIFE AF FORM 942

RECORD OF EVALUATION

NAME (Last, First, Middle Initial)					SSN		
Buice, Todd M.							
TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETED	QUALIFICATION LEVEL (COMMAND)	TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETED	QUALIFICATION LEVEL (COMMAND)
	ANNUAL REVIEW	20020107	(AFSOC)				
MH-53M	QUAL	20020729	1 (AFSOC)				
MH-53M	MSN	20020729	1 (AFSOC)				
	Annual Review	20030117	(AFSOC)				

AF FORM 942, 19961201 (EF-V3) PREVIOUS EDITIONS ARE OBSOLETE.

INTENTIONALLY

LEFT

BLANK

XVI. MISHAP RIGHT SCANNER (MRS) FLYING HISTORY REPORT

Crew flying histories were determined not to be a factor. This mishap was originally considered a Class C, maintenance-related mishap. Flight histories were not gathered for the crew until the formation of the SIB. The attached documents were gathered on 28 May 03 and include 6.7 mishap flight hours.

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552A)

PREPARED 03 MAY 29 11:09 FLYING HISTORY REPORT (PA) AS OF 03 MAY 29 PCN SA036-F40

INQUIRY

NAME: THARP, JOHN K SSAN: GRADE: TSG API: FAC: OFDA: ASC: AA ASC DATE: 03 MAY 99
CMD: SOC WING: 0016SOPWG PRI CRW POS: F PRI ACFT: MH053M UNIT: 0020SOPSQ0 BASE: HURLBURT FIELD

AIRCRAFT TOTALS

AIRCRAFT MDS	MH053M	MH053J	SMH053J	SMH053M	STH053A	TH053A
FLT DTY CERT CODE	MF	MF	MF	MF	UF	UF
DATE FIRST FLOWN	07 MAR 00	04 OCT 99	20 JUL 99	21 FEB 02	24 MAY 99	18 JUN 99
DATE LAST FLOWN	25 MAY 03	12 DEC 02	21 FEB 02	24 JUL 02	27 AUG 99	25 AUG 99
TOTAL TIME	903.2	161.3	100.2	10.0	42.8	77.7
PRIMARY TIME	867.0	153.0	88.9	7.4	40.8	60.5
SECONDARY TIME	4.7	0.0	0.0	0.0	0.0	0.0
INSTRUCTOR TIME	0.0	0.0	0.0	0.0	0.0	0.0
EVALUATOR TIME	0.0	0.0	0.0	0.0	0.0	0.0
OTHER TIME	31.5	8.3	11.3	2.6	2.0	17.2
PRIMARY NIGHT	456.5	132.2	2.0	0.0	0.0	1.0
PRIMARY INST	0.0	0.0	0.0	0.0	0.0	0.0
PRIMARY SIM INST	0.0	0.0	0.0	0.0	0.0	0.0
NVG TIME	257.1	57.5	0.0	0.0	0.0	0.0
COMBAT TIME	150.1	0.0	0.0	0.0	0.0	0.0
CMBT SUPPORT TIME	31.9	0.0	0.0	0.0	0.0	0.0
COMBAT SORTIES	76	0	0	0	0	0
CMBT SUPPORT SORTIES	23	0	0	0	0	0
TOTAL SORTIES	381	67	27	4	15	38

PAGE 1 PAGE 1

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552A)

PREPARED 03 MAY 29 11:09 FLYING HISTORY REPORT (PA) AS OF 03 MAY 29 PCN SA036-F40

INQUIRY

NAME: THARP, JOHN K SSAN: GRADE: TSG API: FAC: OFDA: ASC: AA ASC DATE: 03 MAY 99
CMD: SOC WING: 0016SOPWG PRI CRW POS: F PRI ACFT: MH053M UNIT: 0020SOPSQ0 BASE: HURLBURT FIELD

CAREER TOTALS

CREW POSITION	FLIGHT ENG
PRIMARY TIME	1080.5
SECONDARY TIME	4.7
INSTRUCTOR TIME	0.0
EVALUATOR TIME	0.0
OTHER TIME	57.0
TOTAL TIME	142.2
STUDENT TIME	0.0
OTHER US MIL TIME	0.0
FOREIGN MIL TIME	0.0
CIVILIAN TIME	0.0
COMBAT TIME	150.1
COMBAT SUPT TIME	31.9
TOTAL SORTIES	486
COMBAT SORTIES	76
COMBAT SUP SORTIES	23
NVG TIME	314.(
DATE FIRST FLOWN	18 JUN 9
DATE LAST FLOWN	25 MAY (
GRAND TOTAL	1142.2

PAGE 2

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

XVII. MRS 30/60/90 DAY FLYING HISTORY

The below flight times are as of 21 May 03 and do not include the mishap flight hours.

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

PREPARED 11 JUN 2003 10:22 REPORT OF AIRCRAFT ACCIDENT INVESTIGATION (PA) AS OF 11 JUN 2003 PCN SA036-F20

NAME: THARP, JOHN K GRADE: TSGT SSAN. API: A FAC: A ASC: AA DAFSC: 1A171B AGE:

CMD: SOC WING: 0016SOPWG ORGANIZATION: 0020SOPSQ CREW POSITION: MF ASC DATE: 03 MAY 1999
CURR RATING: AIRCRAFT TYPE: MH053M SERIAL NUMBER: 1648

*** ACCIDENT AIRCRAFT ***

	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT
MH053M	883.4	4.7	0.0	0.0	31.5	919.6	883.4	464.7	0.0	0.0	388
LAST 30 DAYS	33.5	0.0	0.0	0.0	0.0	33.5	33.5	20.6	0.0	0.0	12
LAST 60 DAYS	61.1	0.0	0.0	0.0	3.4	64.5	61.1	35.9	0.0	0.0	25
LAST 90 DAYS	104.0	0.0	0.0	0.0	3.4	107.4	104.0	73.2	0.0	0.0	39

*** OTHER ACTIVE AIRCRAFT ***

	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT
MH053J	153.0	0.0	0.0	0.0	8.3	161.3	153.0	132.2	0.0	0.0	67
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
SMH053J	88.9	0.0	0.0	0.0	11.3	100.2	88.9	2.0	0.0	0.0	27
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
SMH053M	7.4	0.0	0.0	0.0	2.6	10.0	7.4	0.0	0.0	0.0	4
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0

** CAREER TOTALS ***

PAGE 1

PERSONAL DATA PRIVACY ACT OF 1974 (5 USC 552a)

INTENTIONALLY

LEFT

BLANK

XVIII. MRS AF FORM 942

RECORD OF EVALUATION							
NAME (Last, First, Middle Initial) Tharp, John K				SSN			
TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETED	QUALIFICATION LEVEL (COMMAND)	TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETED	QUALIFICATION LEVEL (COMMAND)
	ASSIGNED 551 SOS		(AETC)				
TH-53A	INIT QUAL	7 Jul 1999	1 (AETC)				
MH-53J	INIT MSN	6 Jan 2000	1 (AETC)				
	ASSIGNED 20 SOS	18 Jan 2002	(AFSOC)				
	ANNUAL REVIEW	11 Feb 2000	(AFSOC)				
MH-53M	INIT MSN (NWO)	12 Jul 2000	3 (AFSOC)				
MH-53M	INIT MSN (NWO)	12 Oct 2000	1 (AFSOC)				
MH-53M	N/N MSN	17 Nov 2000	1 (AFSOC)				
MH-53M	QUAL	19 Dec 2000	1 (AFSOC)				
	ANNUAL REVIEW	2 Feb 2001	(AFSOC)				
MH-53M	MSN	22 Jun 2001	1 (AFSOC)				
	ANNUAL REVIEW	12 Feb 2002	(AFSOC)				
MH-53M	QUAL	20 Jun 2002	1 (AFSOC)				
MH-53M	MSN	4 Sep 2002	1 (AFSOC)				
	ANNUAL REVIEW	12 Feb 2003	(AFSOC)				

AF FORM 942, DEC 96 (EF-V1) (PerFORM PRO) PREVIOUS EDITIONS ARE OBSOLETE.

INTENTIONALLY

LEFT

BLANK

XIX. MISHAP LEFT SCANNER (MLS) FLYING HISTORY REPORT

Crew flying histories were determined not to be a factor. This mishap was originally considered a Class C, maintenance-related mishap. Flight histories were not gathered for the crew until the formation of the SIB. The attached documents were gathered on 28 May 03 and include 6.7 mishap flight hours.

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552A)

PREPARED 3 MAY 29 0:50 FLYING HISTORY REPORT (PA) AS OF 03 MAY 29 PCN SA036-F40

INQUIRY

NAME: EZELL, ERIC W SSAN: GRADE: AMN API: FAC: OFDA: ASC: AA ASC DATE: 09 OCT 02
CMD: SOC WING: 0016SOPWG PRI CRW POS: G PRI ACFT: MH053J UNIT: 0020SOPSQ0 BASE: HURLBURT FIELD

AIRCRAFT TOTALS

AIRCRAFT MDS	MH053J	SMH053J	MH053M	SMH053M
FLT DTY CERT CODE	MG	MG	MG	MG
DATE FIRST FLOWN	23 MAR 02	NO DATE	18 NOV 02	NO DATE
DATE LAST FLOWN	17 SEP 02	NO DATE	22 MAY 03	NO DATE
TOTAL TIME	115.8	0.0	159.1	0.0
PRIMARY TIME	111.5	0.0	151.6	0.0
SECONDARY TIME	0.0	0.0	0.5	0.0
INSTRUCTOR TIME	0.0	0.0	0.0	0.0
EVALUATOR TIME	0.0	0.0	0.0	0.0
OTHER TIME	4.3	0.0	7.0	0.0
PRIMARY NIGHT	69.7	0.0	96.2	0.0
PRIMARY INST	0.0	0.0	0.0	0.0
PRIMARY SIM INST	0.0	0.0	0.0	0.0
NVG TIME	69.7	0.0	94.4	0.0
COMBAT TIME	0.0	0.0	94.5	0.0
CMBT SUPPORT TIME	0.0	0.0	0.0	0.0
COMBAT SORTIES	0	0	30	0
CMBT SUPPORT SORTIES	0	0	0	0
TOTAL SORTIES	37	0	61	0

CAREER TOTALS

CREW POSITION	GUNNER
PRIMARY TIME	263.1
SECONDARY TIME	0.5
INSTRUCTOR TIME	0.0
EVALUATOR TIME	0.0
OTHER TIME	11.3
TOTAL TIME	274.9
STUDENT TIME	0.0
OTHER US MIL TIME	0.0
FOREIGN MIL TIME	0.0
CIVILIAN TIME	0.0
COMBAT TIME	94.5
COMBAT SUPT TIME	0.0
TOTAL SORTIES	98
COMBAT SORTIES	30
COMBAT SUP SORTIES	0
NVG TIME	164.1
DATE FIRST FLOWN	23 MAR 02
DATE LAST FLOWN	22 MAY 03
GRAND TOTAL	274.9

PAGE 1 PAGE 1

PERSONAL DATA PRIVACY ACT OF 1974 (5 USC 552a)

INTENTIONALLY

LEFT

BLANK

XX. MLS 30/60/90 DAY FLYING HISTORY

The below flight times are as of 21 May 03 and do not include the mishap flight hours.

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

PREPARED 11 JUN 2003 10:23 REPORT OF AIRCRAFT ACCIDENT INVESTIGATION (PA) AS OF 11 JUN 2003 PCN SA036-F20

NAME: EZELL, ERIC W GRADE: AMN SSAN: API: A FAC: A ASC: AA DAFSC: 1A7731 AGE:

CMD: SOC WING: 0016SOPWG ORGANIZATION: 0020SOPSQ CREW POSITION: MG ASC DATE: 09 OCT 2002
CURR RATING: AIRCRAFT TYPE: MH053M SERIAL NUMBER: 1648

*** ACCIDENT AIRCRAFT ***

	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT
MH053M	164.3	0.5	0.0	0.0	7.0	171.8	164.3	104.4	0.0	0.0	67
LAST 30 DAYS	37.0	0.0	0.0	0.0	0.0	37.0	37.0	23.6	0.0	0.0	13
LAST 60 DAYS	58.4	0.0	0.0	0.0	0.0	58.4	58.4	34.6	0.0	0.0	21
LAST 90 DAYS	94.6	0.0	0.0	0.0	0.0	94.6	94.6	68.2	0.0	0.0	31

*** OTHER ACTIVE AIRCRAFT ***

	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT
MH053J	111.5	0.0	0.0	0.0	4.3	115.8	111.5	69.7	0.0	0.0	37
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
SMH053J	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
SMH053M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0

*** CAREER TOTALS ***

PAGE 1

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

INTENTIONALLY

LEFT

BLANK

XXI. MLS AF FORM 942

RECORD OF EVALUATION

NAME *(Last, First, Middle Initial)*: Ezell, Eric W. | SSN:

TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETED	QUALIFICATION LEVEL (COMMAND)	TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETED	QUALIFICATION LEVEL (COMMAND)
MH-53M	INIT QUAL/MSN	29 Aug 2002	1 (AFSOC)				
	Assigned 20 SOS	10 Oct 2002	(AFSOC)				

AF FORM 942, DEC 96 (EF-V1) *(PerFORM PRO)* *PREVIOUS EDITIONS ARE OBSOLETE.*

INTENTIONALLY

LEFT

BLANK

XXII. MISHAP TAIL SCANNER (MTS) FLYING HISTORY

Crew flying histories were determined not to be a factor. This mishap was originally considered a Class C, maintenance-related mishap. Flight histories were not gathered for the crew until the formation of the SIB. The attached documents were gathered on 28 May 03 and include 6.7 mishap flight hours.

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552A)

PREPARED 03 MAY 29 10:50 FLYING HISTORY REPORT (PA) AS OF 03 MAY 29 PCN SA036-F40

INQUIRY

NAME: BETTISON, AARON C SSAN: GRADE: TSG API: FAC: OFDA: ASC: BA ASC DATE: 04 MAR 02
CMD: SOC WING: 0016SOPWG PRI CRW POS: G PRI ACFT: MH053M UNIT: 0020SOPSQ0 BASE: HURLBURT FIELD

AIRCRAFT TOTALS

AIRCRAFT MDS	MH053M	MH053J	STH053A	NCH053A
FLT DTY CERT CODE	EG	EG	EG	UG
DATE FIRST FLOWN	18 MAR 99	05 MAR 92	NO DATE	13 JUN 94
DATE LAST FLOWN	22 MAY 03	05 SEP 02	NO DATE	13 JUN 94
TOTAL TIME	774.6	1306.3	0.0	3.1
PRIMARY TIME	596.2	1219.8	0.0	3.1
SECONDARY TIME	0.0	1.3	0.0	0.0
INSTRUCTOR TIME	101.6	41.5	0.0	0.0
EVALUATOR TIME	68.0	4.8	0.0	0.0
OTHER TIME	8.8	38.9	0.0	0.0
PRIMARY NIGHT	458.5	597.1	0.0	0.0
PRIMARY INST	0.0	0.0	0.0	0.0
PRIMARY SIM INST	0.0	0.0	0.0	0.0
NVG TIME	499.5	153.2	0.0	0.0
COMBAT TIME	185.4	39.1	0.0	0.0
CMBT SUPPORT TIME	34.5	71.0	0.0	0.0
COMBAT SORTIES	53	24	0	0
CMBT SUPPORT SORTIES	27	27	0	0
TOTAL SORTIES	306	548	0	1

CAREER TOTALS

CREW POSITION	GUNNER
PRIMARY TIME	1819.1
SECONDARY TIME	1.3
INSTRUCTOR TIME	143.1
EVALUATOR TIME	72.8
OTHER TIME	47.7
TOTAL TIME	2084.0
STUDENT TIME	0.0
OTHER US MIL TIME	0.0
FOREIGN MIL TIME	0.0
CIVILIAN TIME	0.0
COMBAT TIME	224.5
COMBAT SUPT TIME	105.5
TOTAL SORTIES	855
COMBAT SORTIES	77
COMBAT SUP SORTIES	54
NVG TIME	652.7
DATE FIRST FLOWN	05 MAR 92
DATE LAST FLOWN	22 MAY 03
GRAND TOTAL	2084.0

PAGE 1 PAGE 1

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

INTENTIONALLY

LEFT

BLANK

XXIII. MTS 30/60/90 DAY FLYING HISTORY

The below flight times are as of 21 May 03 and do not include the mishap flight hours.

PERSONAL DATA PRIVACY ACT OF 1974 (5 USC 552a)

PREPARED 11 JUN 2003 10:22 REPORT OF AIRCRAFT ACCIDENT INVESTIGATION (PA) AS OF 11 JUN 2003 PCN SA036-F20

NAME: BETTISON, AARON C GRADE: TSGT SSAN: API: A FAC: A ASC: BA DAFSC: Q1A771 AGE:

CMD: SOC WING: 0016SOPWG ORGANIZATION: 0020SOPSQ CREW POSITION: EG ASC DATE: 04 MAR 2002
CURR RATING: AIRCRAFT TYPE: MH053M SERIAL NUMBER: 1648

*** ACCIDENT AIRCRAFT ***

	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT
MH053M	606.2	0.0	104.3	68.0	8.8	787.3	710.5	466.7	0.0	0.0	312
LAST 30 DAYS	6.7	0.0	1.4	4.4	0.0	12.5	8.1	8.4	0.0	0.0	6
LAST 60 DAYS	27.6	0.0	1.4	4.4	0.0	33.4	29.0	23.7	0.0	0.0	13
LAST 90 DAYS	70.5	0.0	1.4	6.4	0.0	78.3	71.9	63.0	0.0	0.0	28

*** OTHER ACTIVE AIRCRAFT ***

	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST	NIGHT	INS	SIM INS	SORT
MH053J	1219.8	1.3	41.5	4.8	38.9	1306.3	1261.3	597.1	0.0	0.0	548
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
STH053A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 30 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 60 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
LAST 90 DAYS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0

*** CAREER TOTALS ***

FIRST FLIGHT LAST FLIGHT	PRI	SEC	INST	EVAL	OTHER	TOTAL	PRI/INST TIME	STUDENT	COMBAT	COMBAT	SORT
05 MAR 92 09 JUN 03	829.1	1.3	145.8	72.8	47.7	2096.7	1974.9	0.0	237.2	105.5	861

PAGE 1

PERSONAL DATA - PRIVACY ACT OF 1974 (5 USC 552a)

INTENTIONALLY

LEFT

BLANK

XXIV. MTS AF FORM 942

RECORD OF EVALUATION							
NAME (Last, First, Middle Initial) BETTISON, AARON C.				SSN			
TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETED	QUALIFICATION LEVEL (COMMAND)	TYPE AIR-CRAFT	TYPE OF EVALUATION	DATE COMPLETED	QUALIFICATION LEVEL (COMMAND)
	Assigned 20 SOS		(AFSOC)				
MH-53J	INITIAL QUAL	19 May 1992	MG Q (AFSOC)				
MH-53J	INITIAL NTAC	25 Jun 1992	MG Q (AFSOC)				
MH-53J	NO-NOTICE	5 Aug 1993	MG Q (AFSOC)				
MH-53J	INITIAL SME (NWO)	12 Aug 1993	MG Q (AFSOC)				
MH-53J	ANNUAL QUAL/MISSION	7 Sep 1994	MG Q (AFSOC)				
	Assigned 31 SOS		(AFSOC)				
MH-53J	REQUAL MISSION	15 Jun 1995	MG Q (AFSOC)				
MH-53J	INITIAL SME / RAPPEL	20 Jun 1995	MG Q (AFSOC)				
	Assigned 21 SOS		(AFSOC)				
MH-53J	MISSION	21 Nov 1996	MG Q (AFSOC)				
	Annual Review	2 Dec 1996	(AFSOC)				
MH-53J	INITIAL INSTRUCTOR	13 Aug 1997	1 (AFSOC)				
MH-53J	MISSION	14 Aug 1997	1 (AFSOC)				
	Asigned 20 SOS		(AFSOC)				
	Annual Review	18 Dec 1997	(AFSOC)				
MH-53J	MSN	10 Nov 1998	1 (AFSOC)				
	Annual Review	28 Dec 1998	(AFSOC)				
	Annual Review	1 Nov 1999	(AFSOC)				
MH-53J	QUAL / MSN	28 Mar 2000	1 (AFSOC)				
MH-53M	SPOT	26 Apr 2000	1 (AFSOC)				
	Annual Review	22 Nov 2000	(AFSOC)				
MH-53M	QUAL / MSN	9 Aug 2001	1 (AFSOC)				
	Annual Review	1 Nov 2001	(AFSOC)				
MH-53M	QUAL / MSN	3 Nov 2002	1 (AFSOC)				
	Annual Review	4 Nov 2002	(AFSOC)				

AF FORM 942, DEC 96 (EF-V1) (PerFORM PRO) PREVIOUS EDITIONS ARE OBSOLETE.

INTENTIONALLY

LEFT

BLANK